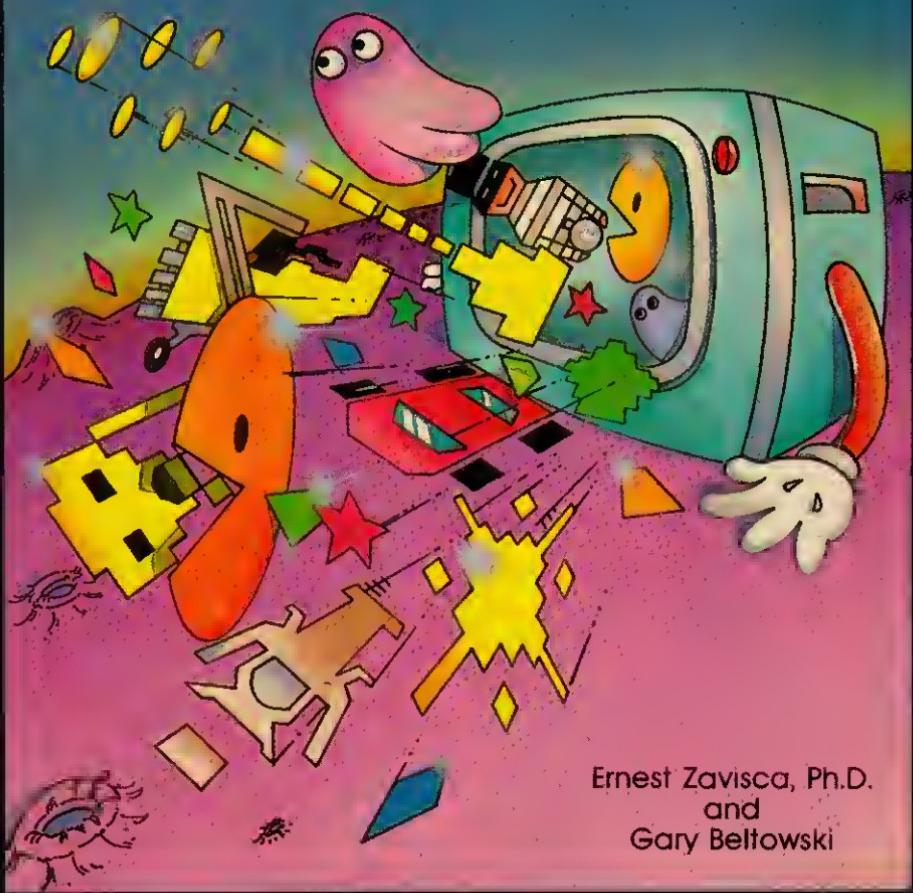


Be a Home Videogame **SUPERSTAR**

Secrets to the Best Games
for your Atari® VCS



Ernest Zavisca, Ph.D.
and
Gary Beltowski

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Before You Begin

Welcome!

WELOCOME TO THE DAWN-ing of the age of video games! The 1980's are truly the decade of the home electronic amusement park, and your television set has become the perfect medium for playing games. People who used to sit passively by and watch TV shows now are active participants in what is rapidly becoming America's number one pastime. Rather than sitting idly, people are now using and developing their hand-eye coordination. Many believe this situation is not only more appealing, but healthier and more creative as well.

Atari is at present the giant of this burgeoning young industry. Its Video Computer System and the similar Sears Video Arcade are in more homes than any other electronic games. As a result, hosts of other manufacturers—even ones like Mattel and Coleco that make their

own systems—are following suit and producing Atari-compatible cartridges.

There is already a great variety of games available, and new cartridges of seemingly endless diversity continue to flood the marketplace. Home games range from original games to scaled-down versions of successful arcade games and electronically automated replications of such old standards as chess. Some of these games bear a noticeable resemblance to one another, but most of them have at least one unique element and are interesting in their own right. Somewhere out there is a cartridge destined to win the heart of just about anyone.

About This Book

This book has one primary goal in mind: to help you, the player or potential player of home video games. The material contained herein can assist you in these ways:

- If you are curious about a

particular cartridge, you can read and learn what the game is all about, how it's played, and what the game variations are like. This could aid you in making the decision whether or not to shell out the money to purchase it.

- This book gives you numerous helpful hints about each game which can help you improve your performance and increase your point totals. Even some of the facts we present about particular games can help you play more intelligently, since they may contain key information you were unaware of. Many of you out there will actually be led quite quickly into producing your best game scores ever.
- Many of our pointers are geared toward the development of better hand-eye coordination and skills in general. These can help you not only for the cartridges discussed here, but in many other video games as well.
- The specific patterns detailed in this book can actually open the gate to "near perfection" at certain games. Of course, you cannot expect to accomplish this in-

stantly; practice is required.

We discuss cartridges made by the following companies:

- Atari
- Activision
- Apollo
- Imagic
- Spectravision

Each cartridge has an entire chapter devoted to it, and each chapter is not dependent on any other chapter. If you want to read about one game, just go to its chapter and read what you want. You can skip around in the book at will.

Chapters generally contain the following:

- Descriptive information about one game
- General helpful hints for that game
- Specific helpful hints for important situations in the game
- Detailed strategies or solution patterns when applicable

A Word of Caution

In several cases we have become aware of slight variations that occur between individual cartridges of the same game. Play on your cartridge at your home may be slightly different from play at a friend's home with his or her cartridge. One potential

slightly different color tones (which, or course, may also be caused by television-set variations). Another possibility is that precise relative locations of game objects may vary. A good example of this is cited in the chapter on the Yars' Revenge game; the issue there is how far the fly has to be into the neutral zone to be safe, and the precise distance will depend on the cartridge.

So as you work with this book, please keep an eye out for cartridge, central-system, and TV variations. Be flexible and ready to adjust slightly to accommodate minor differences. Of course, if a cartridge is drastically different it may contain a true defect, in which case you should consider returning it to the store or to the manufacturer.

Some General Guidelines

The following hints apply to many cartridges rather than to just a single cartridge, and can affect your basic approach to video games. Some of them are also stressed later in individual cartridge discussions if it is felt that emphasis is required there in key situations.

- **Anticipation is important.**

If you know about some game activities that may be coming up or are imminent, keep your eyes, mind, and hands ready for them. Sometimes it is even helpful to begin a move before its intended object arrives on the scene; you may save time or even an electronic life by anticipation.

- **Smooth movements**, as opposed to short and choppy moves, are usually advantageous. Smooth moves give you better control and adjustment possibilities. Also they keep you more relaxed at the game, usually making it more enjoyable as well as more productive. Which brings us to our next point.
- **Relaxation helps.** Always remain alert, but try not to tense up your muscles. It pays to keep your cool.
- **Practice and experience** are necessary if you wish to really perfect certain moves, strategies, and solutions. This cannot be overemphasized. As is true with most activities, you've got to practice in order to improve.
- **Don't get cornered.** Corners and edges of the screen are very dangerous for you in many of the video games.

It is easier for you to get hemmed in there by enemy fire or objects. In most cases a position that provides more escape opportunities is advisable, such as the center of the screen.

•**Concentrate!** You must consciously fight any tendencies your mind has to drift away or daydream. You've got to keep your attention focused on the game at hand for best results. Keep your mind on the game operation at all times!

•**Getting started** and becoming familiar with a new game are usually best done at the lowest skill levels available with the game. In many cases this turns out to be what the manufacturer calls the children's game. Don't be too proud to begin at this level; you can graduate to the next level whenever you feel that you're ready. Once you understand the basic concepts of the game and how it works, try this: If you can take it, switch for a quick try at a very advanced level. Even if you don't do very well there, this brief experience can often sharpen your reflexes (or at least make them seem

sharper) for play at the lower skill levels.

Souping Up Your System

As more and more players try to rack up astronomical scores on their Ataris, various independent manufacturers are seeking to help them in their quest by producing special hardware. New joysticks and controllers are now appearing on the market and competing for your attention. They are usually designed to be more sensitive (responsive to your wishes) than the official Atari hardware, or to "supercharge" your system. For example, computer manufacturer B-C Systems (of Melrose, Massachusetts) makes the BC-Blaster which has five pushbuttons instead of a stick and thus more closely simulates arcadelike action. And by the time you read this you should be able to buy Zircon's new model of their sleek Video Command which will incorporate a fire button to replace the plunger action that many players found awkward.

But can special hardware really improve your scores?

The answer to that question is not a simple one, but depends on the device, the

game you are playing—and your own style. Yet it seems clear that while the good old Atari joystick is the most universally applicable and popular device, other ones may indeed help you perform better with specific cartridges.

One final word: Atari says it is conceivable that use of unauthorized hardware could damage either the central console or individual cartridges. However, two manufacturers of controllers whom we spoke to assured us they had taken proper precautions in design and production, and their devices will not harm your

system or cartridges. So if you do choose to buy such a device, it would be prudent to choose one from a reputable manufacturer.

•••

You are now ready to proceed toward your goal of mastering home video games. Share our winning moves, strategies, guidelines, and solution patterns; with proper application and practice, you should be able to stay alive at games longer and rack up much higher point totals.

Good luck, and have fun in your quest to *Be a Home Videogame Superstar!*

Atari Games

Adventure

Descriptive Information

ADVENTURE IS AN UNUSUAL video game, one that many players find addictive. The game board does not consist of a single screen, or even a few similar screens. Rather, the player must pass through many different screens to cover the total territory over which the game is played.

The total territory, the Kingdom, contains three castles, various rooms and passageways, complicated labyrinths, tricky catacombs, and more. To find the Enchanted Chalice and successfully bring it into the Golden Castle you really have to know your way around. In addition to its tricky terrain, Adventure features keys to the various castles, three most unfriendly dragons, a sword, a portable bridge, a magnet, a pesky bat, and more. You, the single player, are represented by a small square, whose movements you control.

The catacomb area is

especially fascinating. In it, the adventurer (you) carries a computer-simulated torch in an otherwise dark area. The visibility is only a little bit along the pathway in each direction, though you will be able to see objects placed in the Catacombs even before you can reach them.

Most objects can be used to your advantage during the crusade: The sword can kill dragons if used properly, the keys open the castle gates, the bridge essentially gets you over or through walls, and the magnet can attract any of these objects if they are near enough. The catch is that you can hold (and carry) only one at a time.

Helpful Information and Guidelines

The Dragons

THREE DRAGONS who are your deadly enemies. Each one can go

through walls (or anything else, for that matter), and so can take short cuts which you cannot. A dragon's jaws will happily gobble you up, but you may pass through the back of a live dragon's head with impunity.

The yellow dragon (named "Yorgle") is the least intelligent, least dangerous, least courageous, and the slowest. He is afraid of the gold key. He pretty much just wanders around. If he stumbles across the chalice, he stays by it and guards it. Other than that he doesn't really guard much of anything.

The green dragon, Grundle, is of average intelligence and has roughly the same speed of foot that Yorgle has. However, Grundle has jaws that can react and chomp much more quickly (Yorgle really delays before closing his jaws on you). Grundle is the greediest dragon in that he'll guard the most items if given the chance. The list of items includes: black key, magnet, chalice, and bridge. He'll chase you, but will almost never leave a room if he is currently guarding something in it.

Rhindle, the red dragon, is

the fastest and most dangerous; in fact his speed is about the same as yours, so watch out. He is the most intelligent, and chomps the fastest. He will guard the Chalice and the white key.

The term "guard" means that the dragon never leaves a room containing that object. Thus one hint for the fugitive crusader is to run *through* a room having an object that a dragon guards.

Keep the Sword Below You

In general, the sword will prove most effective if it is carried below you. If you pick up the sword, carry it thus:



Keep the Key Above You

Almost all of the time, it is best to carry a key above you (as illustrated below) if its castle has not yet been opened.



Cross on the Middle of the Bridge

Assume that you have placed

the bridge in the exact position where you are to use it to cross something. As you cross, go exactly along the middle of the bridge; if you accidentally brush against one of the edges, you "pick up" the bridge and move it out of position. Then you must repeat the entire strategic positioning of the bridge. (You may also get trapped within a wall if you use the bridge incorrectly.)

Leave a Castle with Its Key Beneath You

Once you open a castle, it stays open unless you leave it carrying the key on top of you. In this case you will unintentionally close it. Thus it is best to leave castles with the key beneath you. All the rest of the time, carry the key above you to permit easy entrance into the castle, as indicated in the hint above.

Get Rid of Grundle

Even if you have no easy access to the sword, Grundle can still be rendered helpless rather easily. To take him out of action, lure him to a room by carrying any item that he guards. Release it there. He'll stay there and guard it, not to

bother you any more (unless of course you reenter the room). Of course, if you have a good opportunity to kill him, that would be preferable.

Get Rid of Rhindle

The same trick mentioned above works for Rhindle if you use one of the objects which he guards (the chalice or the white key).

The Bat Can Help

Make use of the bat's habit of switching objects with you. If you want something that he has, simply bring any other object near him; he'll switch, leaving you with the object you desire.

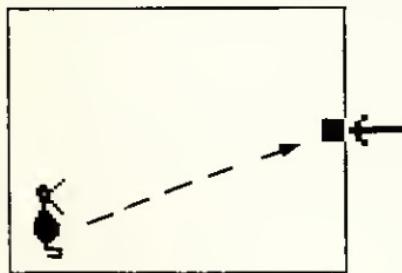
Dragon Dealing

There are generally three ways to successfully deal with a dragon. (1) Give him something to guard, as indicated above. (2) Kill him by causing either end of the sword to come in contact with him. He cannot be killed, however, when his jaws are open. (3) If the bat holds a live dragon, grab the bat (not too near the dragon's mouth), carry him to the gold castle room, and release him there by the technique that we call

called "Trapping the Bat." See page 19.

Hide the Sword in "A" Difficulty

In a game at difficulty-level A, the dragons will not go to you if they see that you are carrying the sword. Thus you must conceal the sword from their sight until it is too late for them. This can be done as follows: Assume that you know which room a particular dragon is in. If you approach that room from the right, then pick up the sword and keep it on the right side of your "body." As you just enter the room, all the dragon sees is you (the sword is not in the room at first). He will approach you. At that point you finish entering the room and circle around him quickly, poking him with the end of the sword away from your body. See the diagram below:



Castles and Keys

In Adventure game 1, there are only two castles with their

corresponding keys: gold and black. In Adventure games 2 and 3, there are three keys and castles: gold, black, and white.

The Sword

A dragon is killed if he comes in contact with either end of the sword; it does not have to be the pointed end of the sword. But the top or bottom edge of the sword does nothing upon contact.

It is safest to try to stab a dragon at his tail end, the farthest point from his jaws (he can only kill you via the jaws).

The pesky bat cannot be killed by the sword—in fact, he cannot be killed at all.

The Bridge

The bridge allows you to cross walls and boundaries that you ordinarily cannot go through. It permits you to cross anywhere vertically (but not horizontally). Place it such that two prongs touch one allowable area and the other two prongs touch the other allowable area you wish to reach. If you touch the bridge accidentally during the crossing, try to release it immediately so that it will not stray too much from the

original position.

It is safest to bridge between two points that are both within the same screen. If you attempt to bridge from one screen to another, you may be in for a big surprise. There are some situations where bridging from one screen to another can result in your becoming trapped in a wall, for example: Forget that game!

The Magnet

The magnet attracts these objects: keys, chalice, sword, and bridge (toward the two prongs of the magnet). The magnet seems to "attract" only one object at a time. It can be useful to recover items which become trapped in a wall.

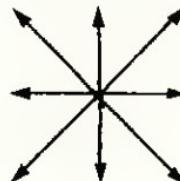
The Game Variations

Game 1 is the simplest and has only two dragons. In games 2 and 3, the dragons are more fleet of foot and they also chomp more rapidly. At the beginning of game 2, the items are always in the same places. In game 3, all items are placed randomly at the start.

The Bat

The bat appears only in games 2 and 3. He is generally a pest,

but you can sometimes use him to your advantage. In a way he seems smarter than the dragons. He is continually flitting about, flapping his wings, wanting to grab the first object he sees at the start of the game. After that, he wanders about and exchanges with any object he sees about ninety percent of the time. His speed is about the same as yours. He, like the dragons, can go through walls or any other obstacle. Fortunately you can grab him, thereby acquiring any object he holds. Unless you seize him he never sits still, traveling constantly in one of these eight directions:



Trapping the Bat

Under the right conditions, it is possible to trap the bat, causing him to become imprisoned in the gold castle room. This can be done when he is currently traveling in any direction without downward movement. It works best when he is traveling straight east or west.

Grab him when he is going

one of those directions and is carrying some useless item, such as a key to a castle which is already open or a sword when all dragons are dead. Carry him to the gold castle room, which should be empty. (If possible, never allow him to see other objects lest he escape and go for them.) Release him there and he will continue to fly through that room forever, crossing the room in the same direction over and over again. (There is a slight chance he will escape your grasp during the trip to the gold castle; however, this technique works almost all of the time.)

One word of warning: If you reenter the room where the bat is trapped, you may enable him to escape—a frustrating experience, especially if you do so out of carelessness!

Objects Trapped in Walls

If an object that you need becomes trapped within a wall, try using the magnet, the bridge, or the bat to retrieve it. If you seize the bat while he's carrying something you don't need and carry him to where the trapped object is, you may be able to get him to

perform a switch.

Blinking

When enough objects (usually three or four) are on a single screen, the whole room will blink. When this happens,

- It is easier to avoid a dragon's jaws
- 90 percent of the time, a sword will not kill a dragon; and
- You may safely pass right through a live or dead dragon.

Index of Places

"Golden Castle" - the player's home; it is also where he starts the game and ends (hopefully).

"Hallway" or "Central Passage" - the horizontal three-section passage running beneath the Golden Castle.

"Blue Labyrinth" - the blue-outlined series of five different screens which are hard to move through without maps. It is the largest and most active area.

"Black Castle" - where the hypothetical Evil Magician lives. The Chalice is usually within.

"Catacombs" - this orange-patched network is similar to

the labyrinth except that you can only see a part of the screen in the limited radius around the "square" (player). It is a very dangerous place, and most difficult to successfully move around in.

"White Castle" - a neutral castle and the surrounding area beneath the catacombs. It may contain items of benefit or woe to the player.

"Red Dungeon" - the area inside the White Castle similar to the Blue Labyrinth.

"Grey Dungeon" - the area inside the Black Castle similar to the Catacombs. It is the most dangerous area.

The overall terrain is not as complicated as in games 2 and 3, and there's no bat to taunt you in this game.

To grab or pick up an object you simply contact it. To release an item, you press the red button and move away from the item. To exchange objects, you just touch the new object and keep moving; you will automatically drop the other object.

If you hit the reset switch, the game starts over, but all items begin where you left them (any dragons you may have slain are brought back to life). And remember, if you use A difficulty then the dragons will chomp faster and will run from the sword, making it more difficult for you to kill them.

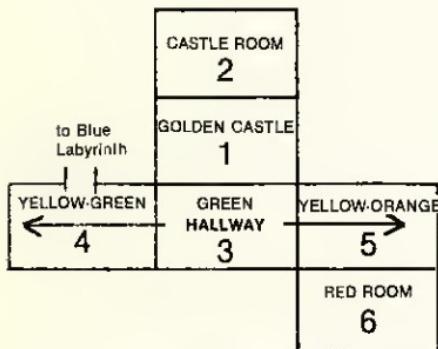
Diagrams of the exact layout are difficult to explain because the environment is not simply two-dimensional. Different map parts actually exist on top of one another; you may get to one or the other depending on precisely how you approach it. The Blue Labyrinth part of the overall map is especially difficult to teach someone. Without going into details, we will indicate how to get from

Game 1: Details, the Layout, and the Solution

THIS IS THE EASIEST GAME and is recommended for beginners. There are only two dragons: the yellow one and the green one. They chomp rather slowly, and they can be slain rather easily. In this game, the dragons even assist you once in a while by actually moving accidentally into the sword (but don't count on this happening). Their behavior in general is not very intelligent.

one screen-size block to another in the overall layout for game 1.

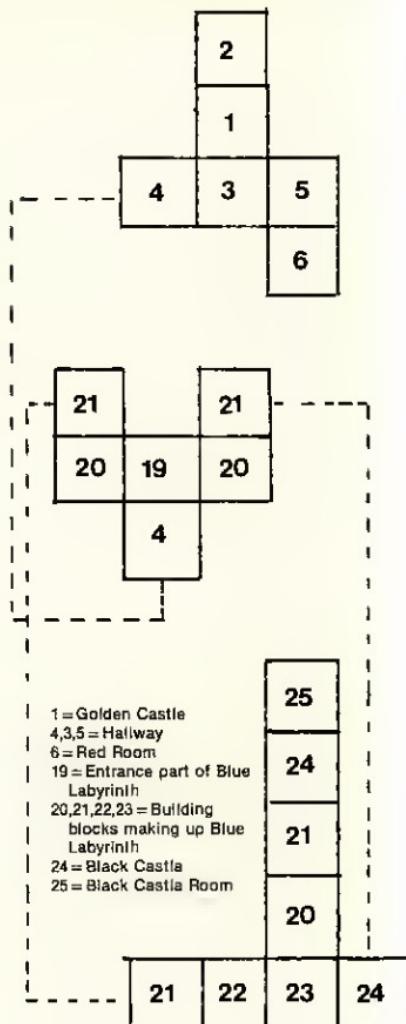
You begin this game in the front yard of the Golden Castle. A general diagram of the territory around the castle is shown in Figure 1. Each block in the figure represents



**Fig. 1. First Six Blocks
of the Game 1 Map**

one screen on your TV; the blocks are given identification numbers for our discussion. As your first move you could use the key to open the castle, then go up from block 1 into the first room of the castle (block 2). Or you could first go down to block 3, the center block in the three-block hallway. The right end of the hallway (block 5) can lead you downward to a separate room (block 6). Going upward from block 4 leads you out of the

two-dimensional world and into the crazy Blue Labyrinth.



—Indicates a continuation of the map

**Fig. 2. All Significant Blocks
of the Game 1 Map**

Refer to Figure 2. The map is shown in three separate portions because otherwise some blocks would be on top of

each other due to the unconventional characteristics of the layout. From block 3 you go left to get to block 4, then go up to get to block 19; however, if you then go to the right, you end up in the rightmost block 20 rather than back in block 1!!! This takes some getting used to at first. Certain block numbers (e.g., 20) are repeated in the diagram because they are exact duplicates of each other. An object left in one of those block 20's will be in the other block 20 when you get there; they are one and the same place.

Referring to Figure 2 again, notice how you would go from block 1, the Golden Castle, to block 24, the Black Castle. You would go down to block 3, left to block 4, up to block 19 (the entrance part of the maze), left to block 20, up to block 21, right to block 22, right to block 23, and up through blocks 20, and 21, finally reaching block 24, the

Black Castle. If you understand this, you have mastered what is probably the most difficult part of game 1.

These directions have been simplified in two regards:

(1) Each block in the maze consists of several winding paths, making it not trivial to get from one block to the next. However, with a little practice, you should be able to make the transition from the Golden Castle to the Black Castle as indicated in the paragraph above. (2) At a couple of points, the permissible path takes you slightly out of a block and back in again, a deviation of maybe an inch on a nineteen-inch TV set. This trivial deviation is ignored in the paragraph above also. Details of the individual blocks of the Blue Labyrinth are shown in Figures 3 through 7. In those figures, the light portion indicates the allowable paths; the dark portions are the walls.

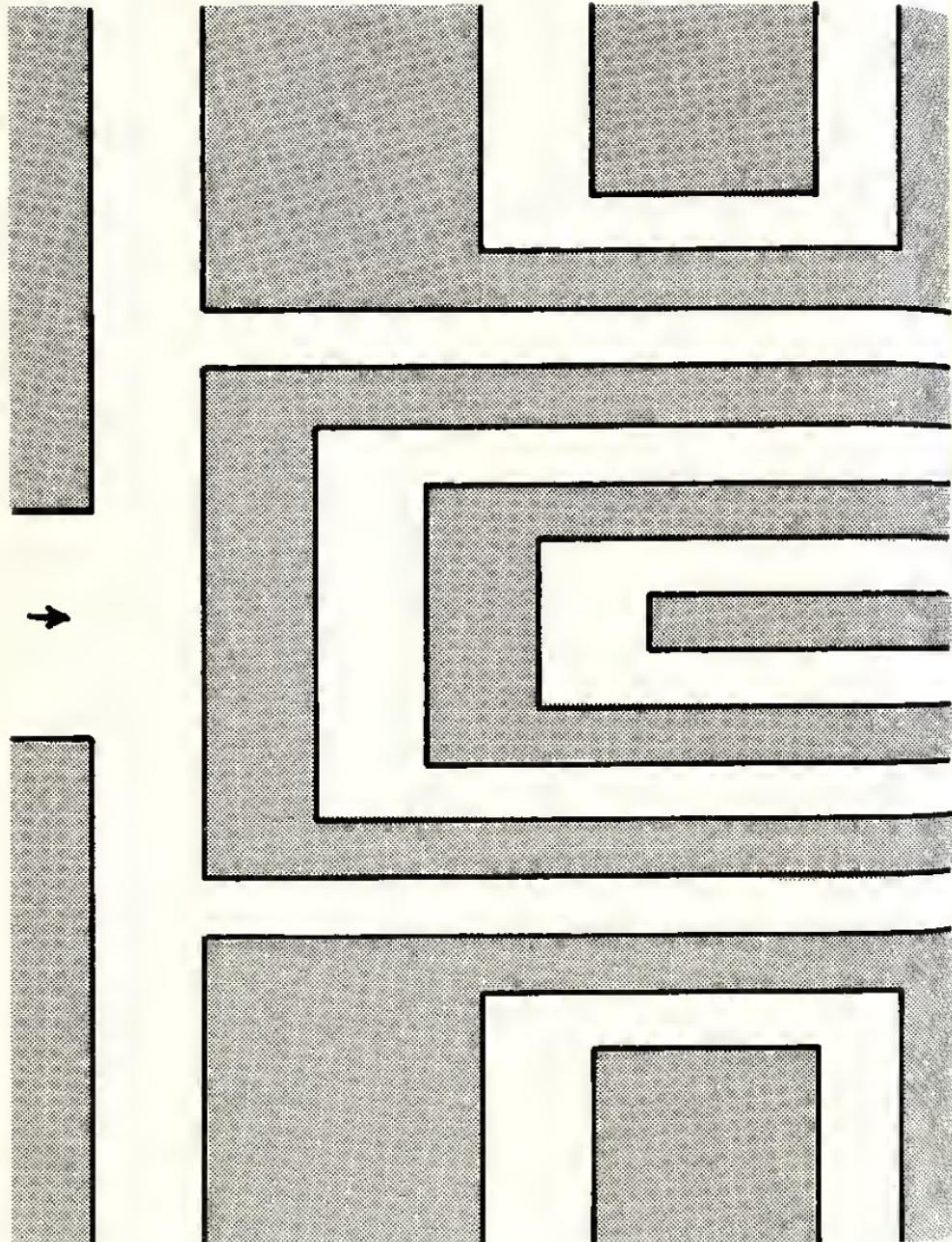


Fig. 3. Block 19 of the Blue Labyrinth

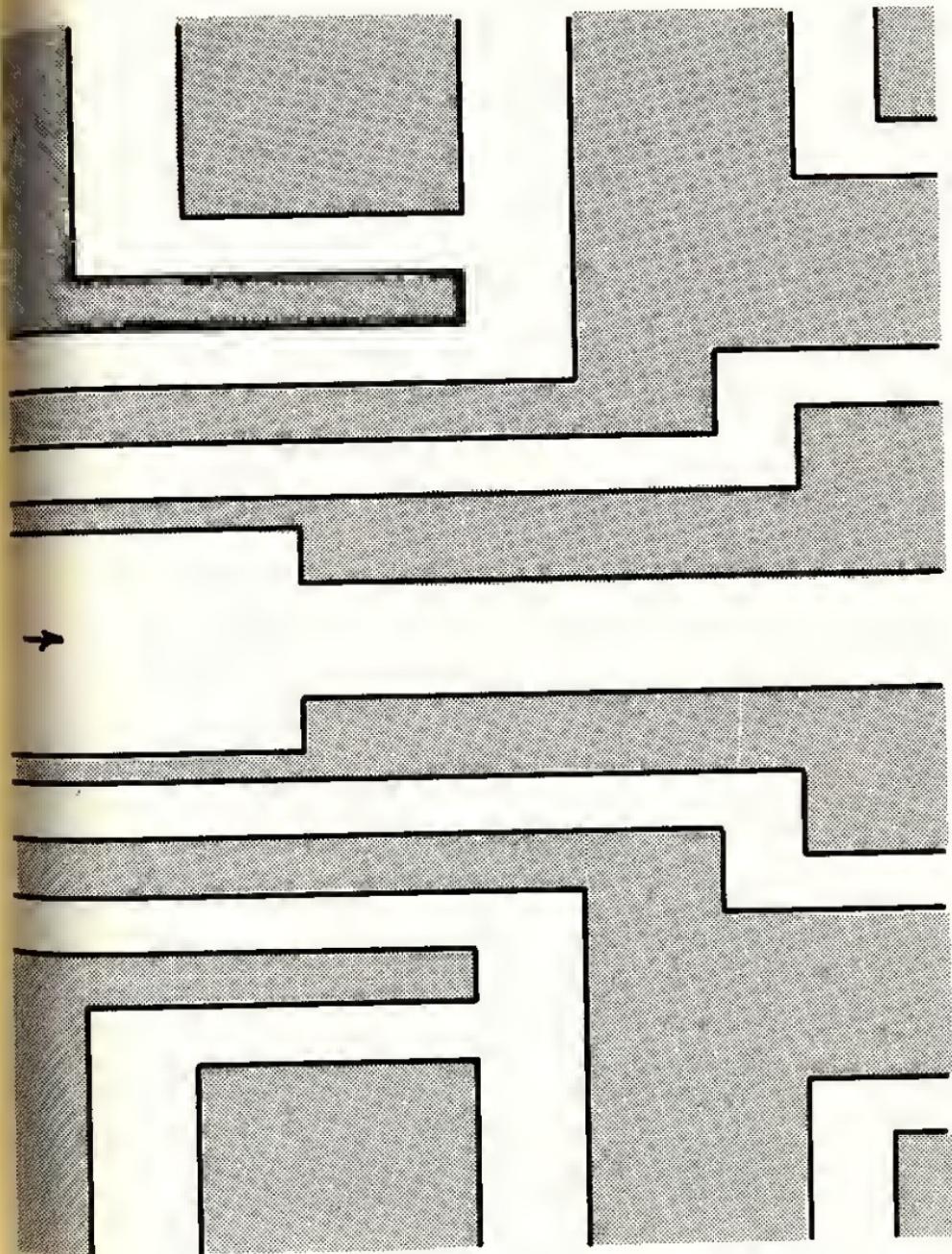


Fig. 4. Block 20 of the Blue Labyrinth

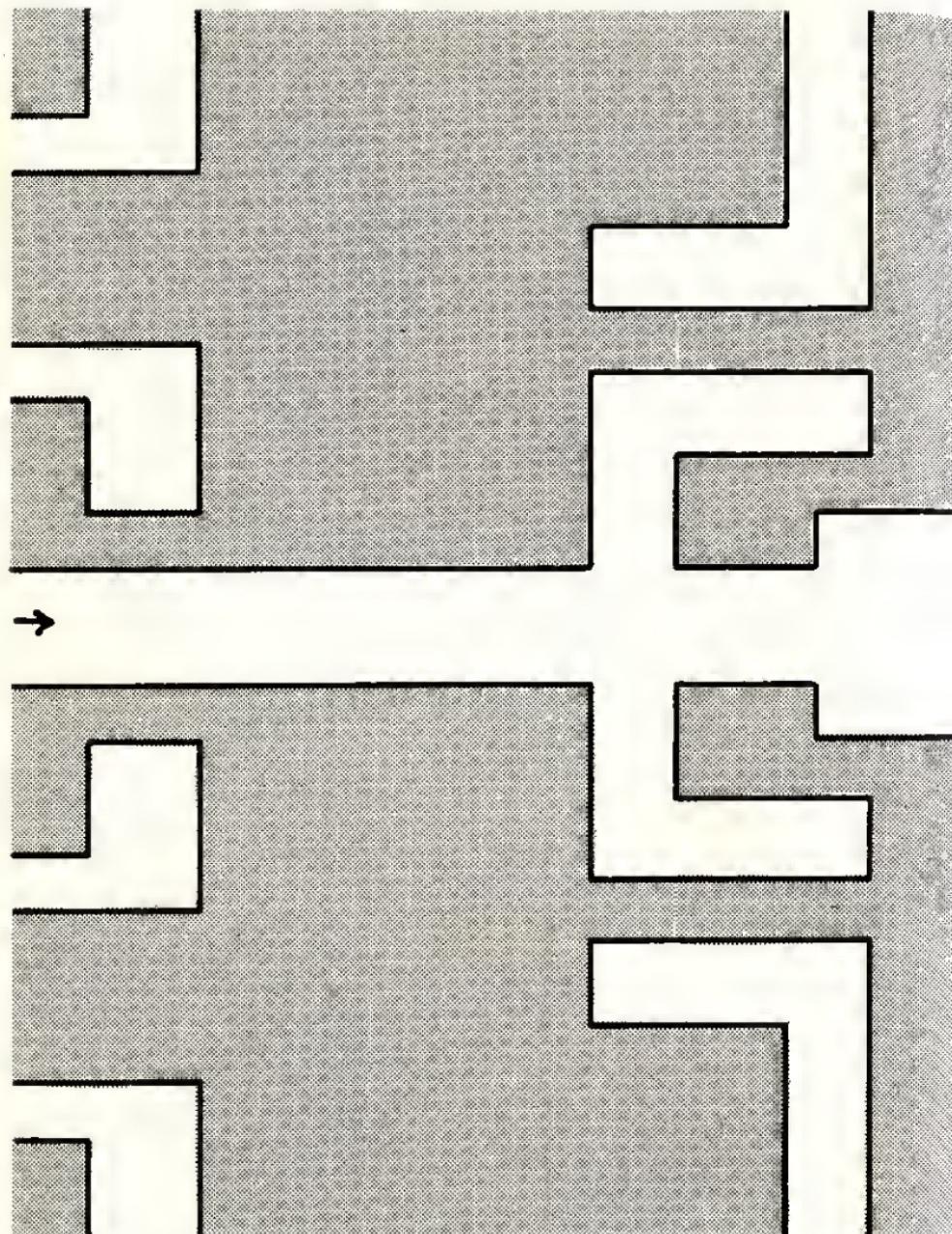


Fig. 5. Block 21 of the Blue Labyrinth

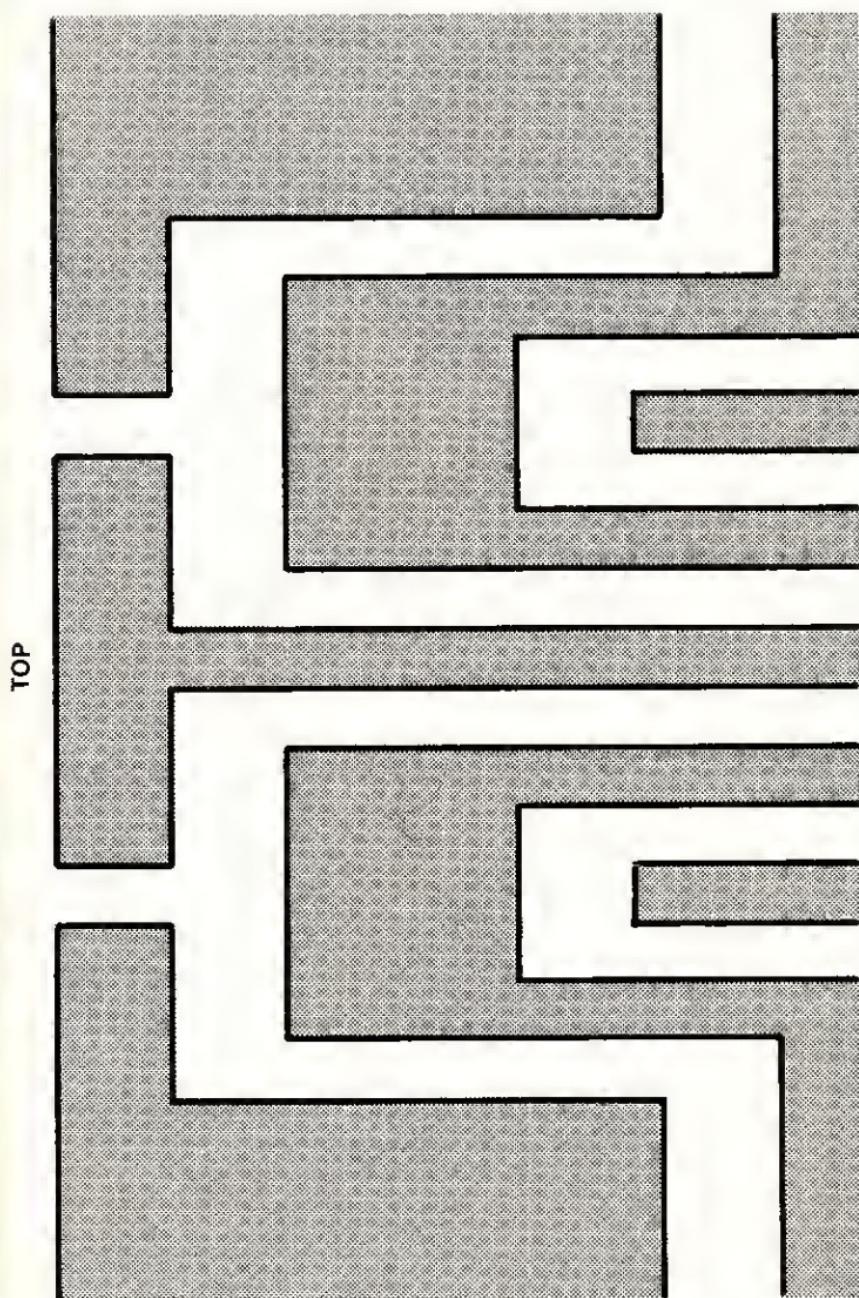


Fig. 6. Block 22 of the Blue Labyrinth

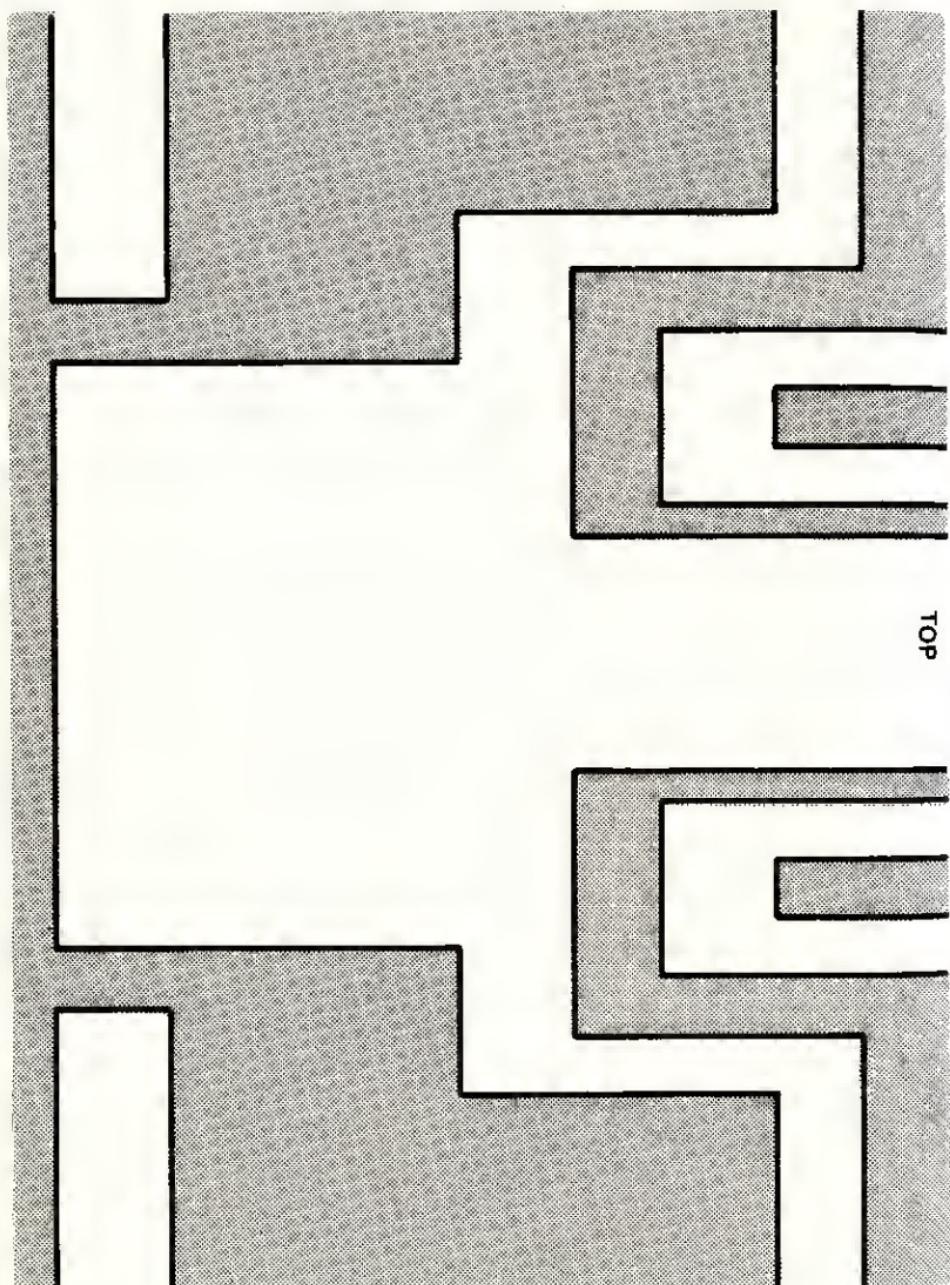


Fig. 7. Block 23 of the Blue Labyrinth

The Solution for Game 1

To bring the Chalice into the Golden Castle, winning game 1, follow these steps:

- (1) Open the Golden Castle gate, go into the castle room, and grab the sword, positioning it beneath you.
- (2) Go to block 4 and quickly kill the Yellow Dragon who's waiting there for you.
- (3) Go to block 6, the Red Room and kill the Green Dragon, who is waiting there.
- (4) All the dragons are now dead, so release the sword and grab the Black Key.
- (5) Return to block 4 and go up to block 19 entering the Blue Labyrinth.
- (6) Go to the Black Castle as follows: right to block 20; up to block 21; and up into block 24, the entrance to the Black Castle. Note: Don't disturb the bridge in block 21.
- (7) Open the castle and release the key (it floats to the magnet).
- (8) Go to block 25, the Black Castle Room, and pick up the Enchanted Chalice.
- (9) Reverse your steps and deposit the Chalice in the Golden Castle, completing the victory!

Congratulations! You have learned a lot about this game

rather quickly.

Note that this is not the only possible solution. There are alternate paths through the Blue Labyrinth; and you could even use the bridge to take a shortcut through that maze.

Game 2

IN GAME 2 THE MAZE IS more complex and the game is considerably more difficult. The "world" for games 2 and 3 is shown (at a very general level) in Figure 8. Details of the total environment would require almost an entire book and hence are not included here. The locations of the three castles are highlighted in the figure. Other important regions and their corresponding block numbers are listed here; use this list in conjunction with the figure:

Hallway	3, 4, 5
Catacombs	6, 7, 8
Red Dungeon	15, 16, 17, 18
Grey Dungeon	A, B, C, D
Blue Labyrinth	19, 20, 21, 22, 23

A couple of portions are shown in detail now, and will be referred to later. See

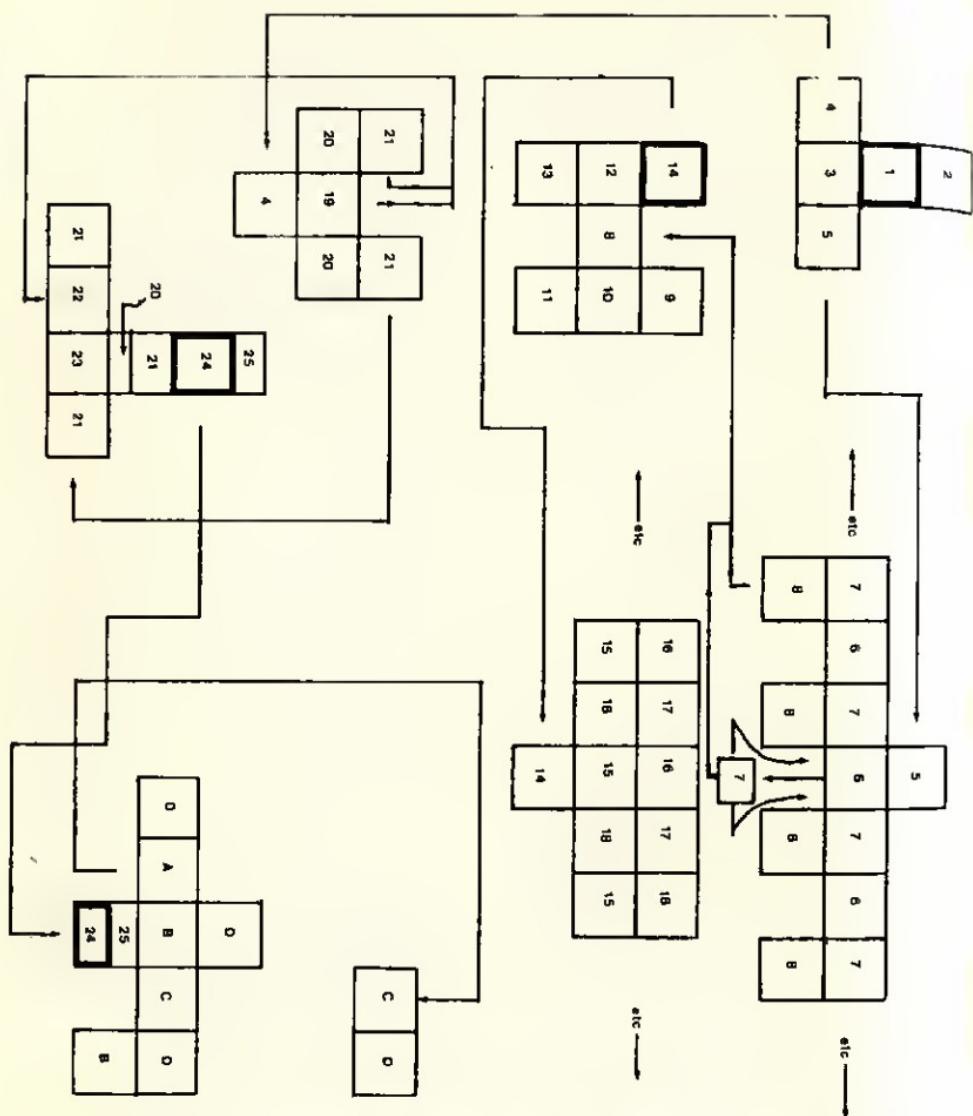


Fig. 8. All Blocks of the Games 2, 3 Map

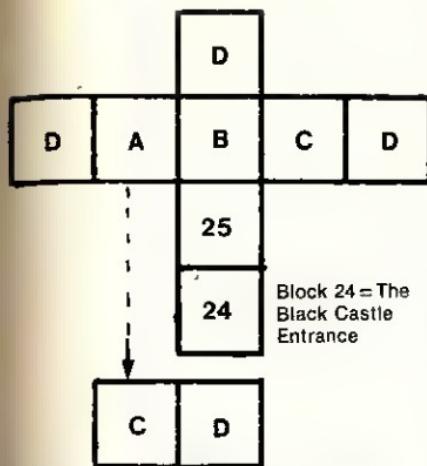


Fig. 9. The Grey Dungeon (General)

Figures 9 and 10 which show the Black Castle and its dreaded Grey Dungeon. The Grey Dungeon is a catacomb-like area in which it is quite difficult to find your way around. The map should prove to be helpful, especially in "Finding the Secret Message" which is discussed at the end of this chapter.

Figures 3 through 7 gave details of blocks 19 through 23, which comprise the Blue Labyrinth.

castle while it is carrying the Gold key.

Suggested Steps:

Immediately trap the bat, positioning yourself under him at the point where he is holding the sword — you don't want to be strung out in a row three across, if possible. Then you might want to descend with him into the hallway and go left into the next section, the chartreuse part, to see if Grundle appears and you can skewer him there. After you do so, or if he does not appear quickly, go two blocks to the right and then descend with the bat into the Catacombs, where the Gold Key is (and Grundle may await you, be careful!).

Note: The key is in the northwest part of block 7, though you will have to descend into block 8 to get to it.

Get the bat to exchange the sword for the key, and quickly return with him to the Golden Castle. If you are holding him right (and have some luck), you will be able to open the castle gate while still holding the bat; enter and release the bat in the upper right corner of room; if his flight path is correct he will continue flying

The Solution for Game 2

First Objective

Your first objective should be to trap the bat in the Golden

Black Castle Entrance

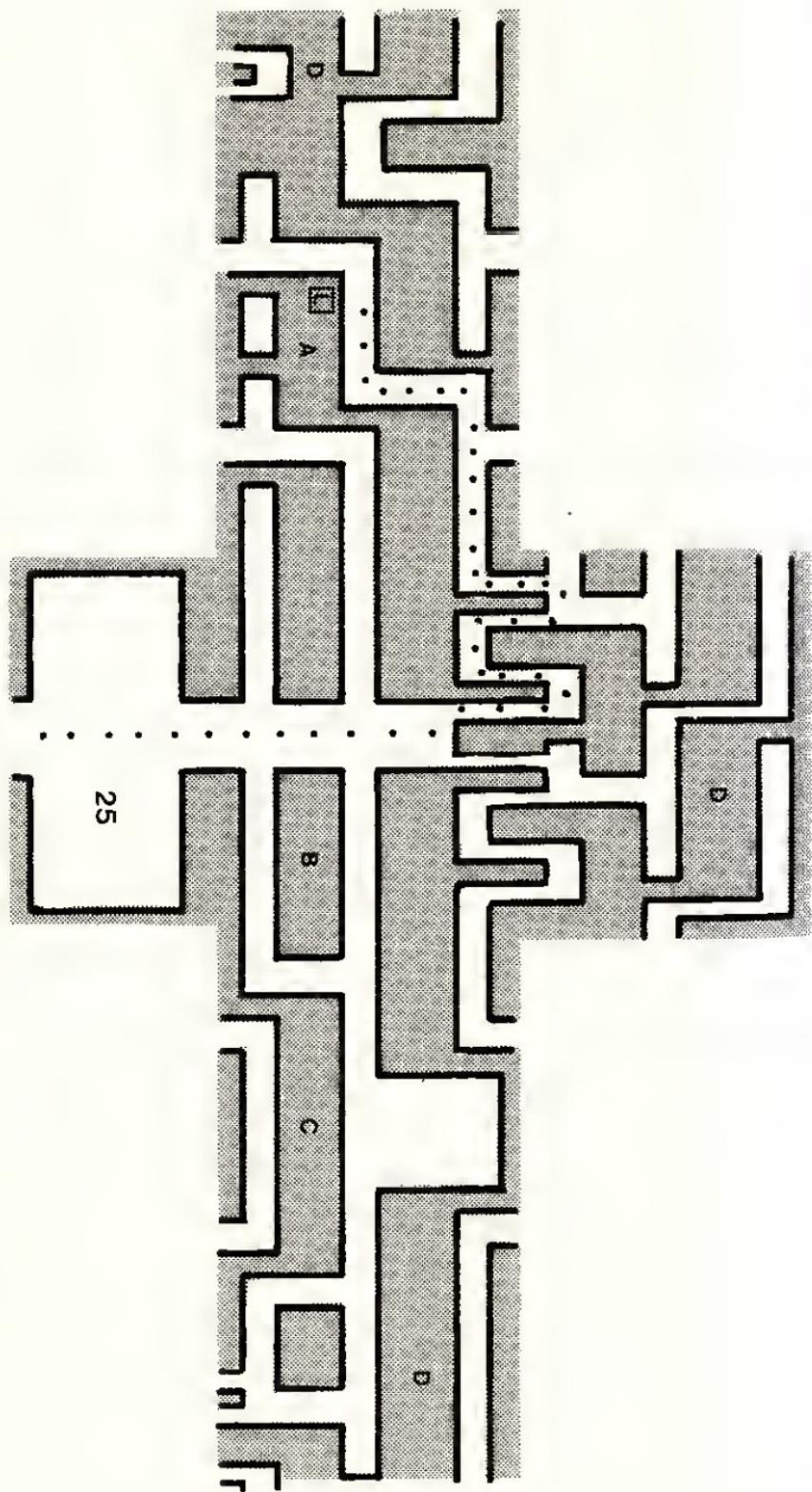


Fig. 10. The Grey Dungeon (Details)

through the room for the rest of the game (or until you reenter the room, thus allowing him to escape). Quickly leave the room before the bat can attach himself to you again. Note: If the bat escapes your grasp before you achieve this goal, it is worth finding him immediately and taking whatever steps are necessary to trap him again. If he escaped before you got the Gold Key, either start the game over again (the easiest solution) or get the key and open the castle for when you find him. Keep the key with you, because you'll want it to exchange with him for whatever he has.

Once the bat is trapped, return to the Catacombs and spear Grundle (if he is still alive). After you have done this, leave the sword at the entrance to the Golden Castle. (If a dragon subsequently gets you, your sword will be ready to spear reincarnated dragons as soon as you come back to life).

Next, get the key to the White Castle from the Blue Labyrinth. Go to the White Castle with it (by descending through the Catacombs) and cautiously tap open its gate,

quickly leaving as soon as you get it open: Yorgle is inside waiting to get you! If he does, your sword awaits you as you come back to life; if you escape the castle alive, you can now retrieve your sword and come back and kill Yorgle.

At this point, get the Bridge and pass into the Labyrinth's Secret Room (see diagram). Pick up the Black Key and take it with you.

Travel to the Black Castle and open it (you can drop the key inside the first room).

Go back to the White Castle and grab the sword. Hold it below you and as far to the left as you can.

Reenter the Black Castle. In the third room up from the entrance Rhindle guards the Chalice. Go upward smoothly and confidently, brushing against the *right* side of the pathway as you go. This ensures that you will automatically grill him when you meet.

Take the Chalice and win—or first find the Black Dot and go after the Secret Message.

Finding the Secret Message

Authors and artists usually

take great pride in their work and enjoy having their name closely associated with a finished product, particularly a successful one! The creator of the Atari Adventure cartridge appears to be no exception to this. He has programmed into the game a secret message that can be found only after the knowledgeable player performs an unusual series of maneuvers. Rather than reveal what the message is, we will now describe the steps you must take to discover it for yourself.

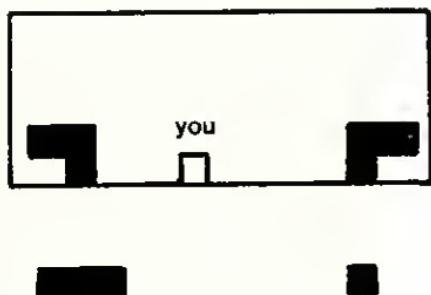
Begin playing game 2 or game 3, and continue until you have slain all three dragons.

(1) After you have killed all three dragons, deposit two game objects in block 5 of Figure 8. This block represents the rightmost part of the central hallway.

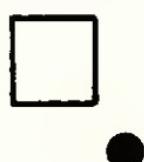
(2) Take the bridge into the Black Castle. Carry the bridge below you.

(3) Go straight up into the Black Castle and enter the Grey Dungeon. Refer to Figure 9, the detailed map of the Grey Dungeon. Follow the dotted line through the dungeon area to the point

shown as L in the figure.
 (4) Release the bridge below you at point L. It should seem a bit queer in appearance, similar to the drawing below:



- (5) Go straight down, crossing the bridge. You will enter a previously invisible secret chamber. Proceed to the lower right corner of the room, and press yourself as far into the corner as you can.
 (6) You will hear the familiar noise which tells you that you have just picked up something. It is the black dot, an item which is not always visible even if you have it.
 (7) You hold the small black dot off of your lower right corner, thus:



However, it is only visible in the catacomb-like areas or when you hold it so that it overlaps an object or a wall.

(8) Carry the black dot to the rightmost portion of the central hallway. This was indicated in Figure 8 as block 5. Release the dot at the right edge of that block.

(9) The right wall of that

hallway will now have disappeared completely or will be blinking. Go to the right, right through where the wall was or is blinking.

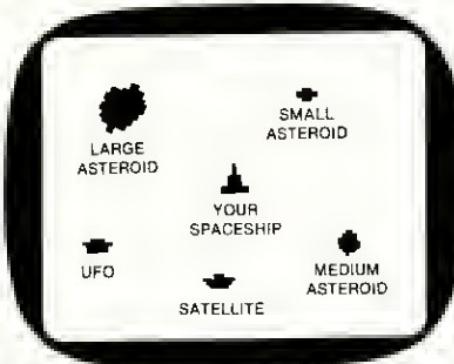
(10) Observe the message in this hidden chamber! (If you cannot quite break through the blinking wall, try adding an extra object to block 5. Then repeat step 9.)

Asteroids

Descriptive Information

ASTEROIDS IS ONE OF Atari's own arcade-game adaptations that has become extremely popular. It continues to rank right up there with the top few favorite home-video games.

The basic elements of the Asteroids game screen are shown below. They are your



space ship, asteroids of various sizes, and occasional extra-dangerous space menaces which are called UFO's and satellites. The game objective is to destroy as many asteroids, UFO's, and satellites as possible while having your ship avoid being hit. Space

survival is the name of the game.

The game controls and effects are similar to Combat's. You rotate clockwise or counterclockwise and push the joystick forward to exert thrust in the direction your ship is pointing. Pulling back on the joystick invokes special features (to be explained later) of hyperspace, shields, or flip, depending on the game number selected. The red "fire" button shoots deadly "photon torpedoes" at your enemies in space. You can have a maximum of two torpedoes on the screen at any one time. (Beginners may find it helpful, especially when faced with large asteroids, to fire almost continually.)

When hit by your torpedoes, a large asteroid breaks into two medium-sized asteroids (one in the children's game), a medium-sized asteroid breaks into one small asteroid, and the small asteroid disintegrates. Thus, if all your shots are accurate, it would

take you five shots to wipe out all traces of each large asteroid (also called a "big rock").

Beginners and intermediate players will probably use the thrust controls sparingly. Unlike Combat's tank games, in Asteroids when you release the thrust control you do not stop immediately; you continue to coast through space. It is quite difficult to determine your exact stopping point in advance. Thus once you stray from the center of the screen, it may not be an easy matter to return safely to that center spot later. In fact, you may never get back!

As is generally the case for Atari games, difficulty B is the one for beginning players. Difficulty A introduces the addition of dangerous UFO's and satellites to the game. The game number chosen via the "game select" switch determines which combination you obtain for these features:

- Asteroid Speed
- How often you get an extra ship
- The number of players (one or two)
- Which joystick-pull-back special feature you get
 - Hyperspace (your ship

disappears and returns at a random location)

- Shields (automatic ship protection for a second or so)
- Flip (instant rotation of the ship to point in the opposite direction)

Scoring is covered in the Atari instruction booklet. You might just want to keep in mind that UFO's are worth the most, then satellites, then small asteroids, then medium-sized ones, and lastly large (easiest-to-hit) asteroids. The screen has only five digits for score; therefore your score returns to zero after reaching the 100,000-point total. For scores above that, you have to remember what your base score is. (Once you get scores in that range, you usually don't mind a little bit of mental scorekeeping.) As you reach certain levels of scoring, you accumulate extra ships—up to a maximum of nine ships "saved up" at any one time.

Your ship always starts off a new game screen facing the top of the screen; in the arcade game, the ship starts afresh facing the direction in which it was last aimed.

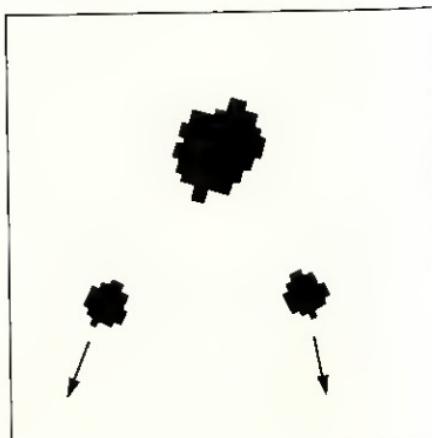
UFO's and satellites enter the screen from either side (never from the top or the bottom) in games played at A difficulty. They enter approximately every 20 seconds. They proceed to harass you, firing deadly shots at your ship. The satellites fire in apparently random directions; the UFO's fire intelligently, trying to hit you. Each can fire only one shot at a time at you. The more deadly UFO is recognized by its smaller size and its higher-pitched engine sound. UFO's don't appear during the first 7,000 or so points of the game. Also note that you will see extra satellites during the first few thousand points immediately following the 100,000 mark. Both UFO's and satellites exit on the side of the screen opposite to their entry point (unless you destroy them first.)

long periods of time.

Know the Rock Movements

In addition to knowing how your ship is maneuvered, knowledge of how the asteroids (rocks) move is important to high scoring at asteroids. Depending on the situation, the size of the rock, and the speed of the rock, different results will occur when the asteroid is hit by your torpedo. Some of these situations are described below:

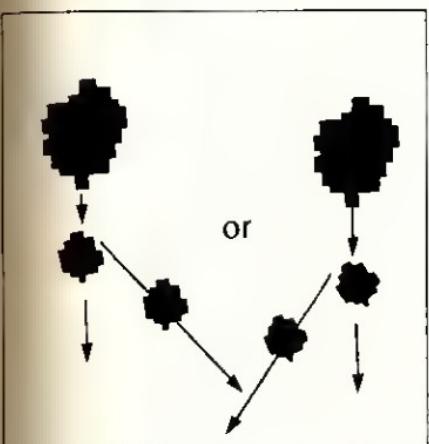
Large, normal-speed rocks — In the normal (slow) speed Asteroids game, when a large rock is hit, it splits into two medium-sized rocks; one moves at a slight angle toward you and the other moves farther away. This is illustrated in the diagram below:



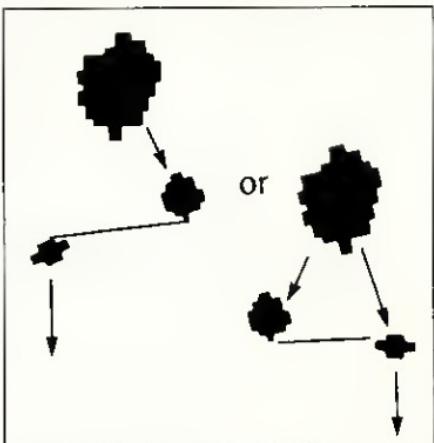
Helpful Hints and Guidelines

THIS SECTION CONTAINS information that should help you survive in space for

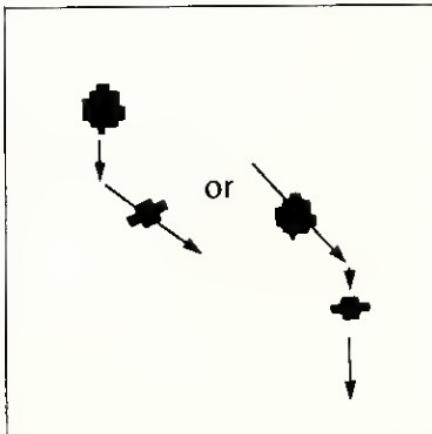
Large, fast rocks—In the fast-rock Asteroids game, when a large rock is hit, it splits into two medium-sized rocks of which one continues straight up and down (as the large rock did) and the other goes at some random diagonal angle (toward or away from you). See the diagram below:



farther away from you. Refer to this illustration:



Medium, fast rocks—In the fast-rock game, when a medium-sized asteroid is hit it becomes a small rock that behaves as follows: (1) If it had been going straight up and down, it now moves at a diagonal angle; or (2) if it had been going at a diagonal angle, it now moves straight up and down. See the drawing below:



Medium, normal-speed rocks—In the normal (slow) speed Asteroids game, when a medium-sized rock is hit it becomes a small asteroid moving “opposite” to its predecessor. For example, if it had been a medium-sized one moving closer to you, it becomes a small one moving

Stay in the Middle

Since your ship is generally difficult to control precisely, always try to stay in the center of the screen in the slow-rock game. Rotate and shoot from that central position, especially near the beginning of the game.

Work on One Rock and Its Descendants

This hint applies primarily to the fast-rock game. After hitting one large asteroid, work immediately on the resulting medium asteroids and then the resulting small asteroids. In other words, work on one asteroid and the rocks that come from it before starting to attack any other large asteroids. This strategy prevents the appearance of too many small asteroids on the screen at one time—the small rocks are the hardest to hit and can give you fits later.

First Nail the Ones at the Angles

When applying a general strategy (such as the one immediately above), here is a sub-strategy to apply within the general one: First tend to the rocks that break off and go at an angle, then take care

of the straight-up-and-down ones.

Practice Maneuvering Your Ship

Use of the thrust control to move your ship to a desired location is a real art in Asteroids. Both beginners and intermediates can benefit a lot from practice of this art. Here's a good way to practice and concentrate on your movement: Play the children's game (game 33) and eliminate all the rocks except one. This then leaves you ample time to practice ship mobility and control.

The Last Rock

When eliminating the final asteroid on the screen, be sure that you are positioned well away from the sides of the screen; this is because new asteroids almost always appear near the sides. Your ideal location is, of course, at the screen's center.

Fire Twice at the Medium-Sized Rocks

When firing at the medium-sized asteroids, fire two shots in rapid succession. This increases the possibility of eliminating two rocks (the medium one and the small one it generates). If possible, you

should fire at the leading edge of the medium-sized asteroid (the edge toward the direction in which it is traveling).

Shields and Big Rocks Don't Mix

In games having the shield feature, it should be noted that the shields last only for a second or so. With even slightly imperfect timing, the shield may not entirely protect you during the passing of a large asteroid. Therefore in shield games it is a good strategy to use your first several shots to hit the large asteroids, breaking them up into components whose sizes the shields can "cover."

Make the Most of Crashing

You will, from time to time, find yourself in a situation where you cannot possibly avoid crashing into one of the enemy objects. You may be cornered by several rocks and perhaps a UFO or a satellite. Since you cannot avoid crashing, you should crash into the object worth the most points and therefore make the most of your plight. In general the smaller object is worth more points. Thus when you have to crash, head for the smallest enemy object.

Shoot More Ahead of Ships

Since the UFO's and satellites are noticeably faster than the asteroids, shooting at them has to be planned slightly differently. You have to shoot farther out in front of the enemy spaceships, to allow for their greater speed. In the back of your mind, you should be thinking, "lead the ships more than the rocks."

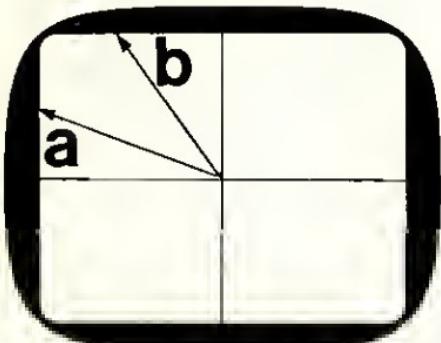
Don't Give Up

Often when a rock or enemy missile is apparently heading right for you at close range, you get the impression that it's all over for you. But it's important to hang in there and keep your concentration up, because there is always the possibility of escape. If you give up too soon and it turns out that you do escape, a secondary rock (which you have ignored) may catch you right in the wake of that narrow escape! So keep up your concentration and always be awake and looking forward to your next maneuver.

Best Angles for Shooting

You can have a maximum of two torpedoes on the screen at any one time. If you fire two shots which miss targets, then

you must wait until one of these torpedoes leaves the screen before firing again. This period of helplessness can really hurt you. Here's a strategy for keeping this interval down to a minimum: The idea is to shoot at angles which guarantee that any errant torpedoes will leave the screen sooner, allowing you to fire again sooner. The TV screen is wider than it is tall. Shots going straight horizontally (e.g., left to right) leave the screen later than shots going up and down. See the diagram below, which assumes that your ship is in the center of the screen. Consider the shooting-angles A and B shown:



At angle B, the distance to the screen edge is much shorter. Therefore an errant shot at angle B will leave the screen sooner, allowing you faster return fire. In summary, shoot at angle B rather

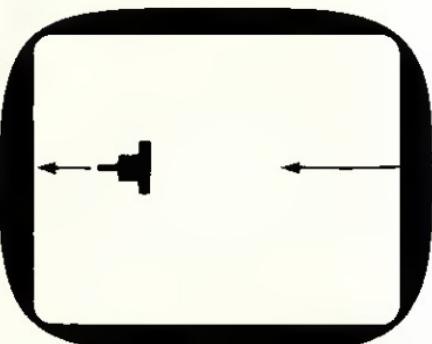
than at angle A—provided of course, that you have targets there and can safely do so.

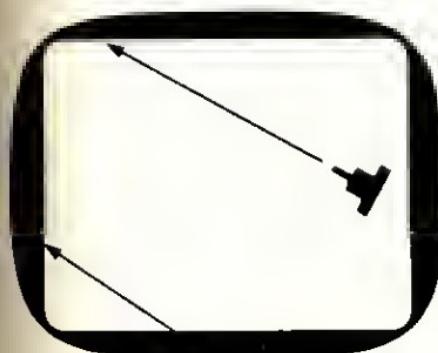
Medium-Rock Direction Change

Medium-sized asteroids always change direction when they transform into a small rock after being hit. If one was coming toward you, the small one will go away from you. If it was going away from you, the small one will come toward you. Knowing this, you can plan accordingly.

Torpedo Wraparound

When you are away from the screen center, your torpedoes have a special wraparound feature. This means that if they go off one edge of the screen without hitting anything, they wrap around and reenter the screen from the opposite edge. See the following drawings:





This effect can be used to hit things behind you (or at awkward angles from you) without wasting time turning around. The wraparound occurs only *very rarely* when your ship is in the center of the screen.

Number of Rocks Per Board

Let's use "board" to mean that portion of the game where any parts of one asteroid set are still in existence. Board 1 refers to the first wave of asteroids, board 2 to the second wave of asteroids, and so on. The first board consists of 4 large asteroids, the sec-

ond board has 6 large asteroids, the third has 6, the fourth has 7, and so on. The children's version has 4 large asteroids on each board.

Hyper All You Want

In games with the hyperspace feature, pulling back on the control causes your ship to disappear (so you can avoid being hit); however, the ship reappears at some random location on the screen. The danger in this is that you could reappear right in the immediate path of a rock or an enemy missile, resulting in spontaneous destruction of your ship. In the arcade version of Asteroids if you use the hyperspace feature too much in a short period of time, then your ship is likely to self-destruct without any contact with rocks or missiles. In the home Asteroids you can use hyperspace all you want; you will not blow up just from too much use of the feature—the only way you blow up via hyperspace is if you do happen to land in the immediate path of a rock or enemy missile!

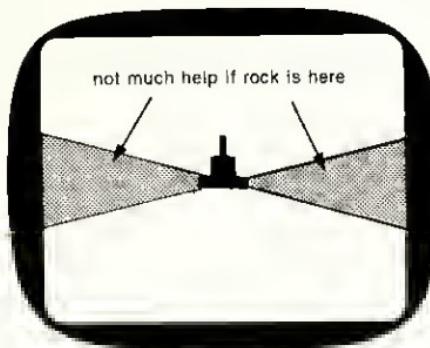
Shield Overuse Wears It Out

In games with the shield

feature, pulling back on the control puts a shield around your ship to protect it from any rock or enemy missile. The shield will normally last for about two seconds. However, if you use the feature too much (say, about four times in a row), the shield loses its effectiveness and will then only last for around a second the next time you try it. The same loss results if you try to hold the control back for more than a two-second period. Therefore only use the shield when you have to; don't waste a lot of shield use on situations where it isn't necessary.

Flip Is Not That Helpful

In games with the flip feature, pulling back on the control results in your ship's rotating to a point exactly opposite to its direction at the time of the flip. The ship's location does not change, just its direction.



The flip feature is better than no extra feature at all, but it is not much help for targets that are near 90-degree-rotation angles from your current direction. See the diagram. For targets within the shaded areas, you might just as well rotate directly (rather than flip and then have to rotate almost 90 degrees anyway).

Hunting Ships

With difficulty A, UFO's and satellites (enemy spaceships) appear once in a while to harass you. They can wipe you out, but you can accumulate a lot of extra points if you get them first. The way to really rack up high totals is to hunt ships. Lots of players like to hunt by going straight up and down, thrusting occasionally to keep in motion (so as not to be a sitting duck.) Do not thrust continuously; thrust and coast. Keep your eyes and ears open for enemy ships' locations and engine sounds.

A final word of advice: The game with shields seems to be the best one for hunting ships, and the best time to do so is when you have only one or two (medium or small) rocks remaining.

Berzerk

THOSE OF YOU FAMILIAR with the arcade scene will recognize the name "Berzerk" as that of a fiendish game of cat-and-mouse in which you are chased by hordes of robot-shaped creatures in a sequence of various mazes. Atari's home-video version is very similar to its arcade prototype, if somewhat easier to master.

Descriptive Information

IN BERZERK YOU ARE snared in an endless sequence of mazes that have a variety of geographical layouts. You must make your way from maze to maze, avoiding deadly obstacles: The walls defining the maze are charged with enough electricity so that even the slightest contact with one will sizzle your man into a pile of ashes instantly. In addition, hostile robot-shaped creatures stalk you. Their touch, as well as their missiles, is deadly. And to spice up the game a bit, a round enemy named Evil Ot-

to can bound into the maze from an outside edge at almost any time. Evil Otto is the mad creator of the robot gang; he too is deadly and is much faster than any of the robots. When you see him entering, you must usually exit from the current maze, thereby forfeiting points for destroying the remaining robots.

You score points for each robot you destroy and acquire bonus points whenever all the robots in a maze have been eliminated. You get the points even if the robots eradicate themselves, which can be accomplished in a number of ways: You can lead them via your movements such that they (1) collide with each other (according to the instruction booklet), (2) shoot each other, (3) run into the electrified walls, or (4) get in the path between you and Evil Otto. Note that you get no points for the destruction of Evil Otto. A maze ends either when you are wiped out or when

you leave it. At that point, the next maze begins.

You start off the game with three lives, your objective being to stay alive for as long as you can and to maximize your point total. In certain Berzerk game variations you can accumulate a bonus life for every 1,000 or 2,000 points you've collected. The screen will show only up to 6 lives remaining, but you can actually accumulate more (up to 255 — after which, Atari says, the counter resets to zero and you must begin winning them all over again!).

At the start of the game, or after recovering from a recent loss of life, you always begin at the left edge of the midsection of the maze.

You use the joystick controller to maneuver your man in any of the basic eight possible directions. Pressing the red button releases your missiles in the direction you are going or facing. You cannot move at the moment you fire a missile. You can have at most one missile on the screen at one time in the home-video Berzerk; the arcade Berzerk allows you to have two missiles on the screen simultaneously. One in-

teresting observation is that the speed of your missile varies, depending on which direction you shoot in:

- Your missiles fly fastest in any of the four diagonal directions.
- They fly at an intermediate speed when you shoot to your left or right.
- They fly slowest when going straight up or down.

Note that the robots can only shoot in four directions: straight up, down, left, or right.

Evil Otto's entry point into a given maze will always be at the edge of the outside wall precisely where you appeared at the start of that maze. Otto bounces and travels relatively slowly when there are any robots remaining on the screen. If all the robots have been eliminated and you linger long enough for Otto to enter, he then travels much faster (at about your speed). During Otto's brief visits, beware: He has no respect for the maze walls and will travel right through them. This can make your escape quite difficult, especially if there are no more robots left in the maze.

On the Berzerk screen between one and seven robots

appear initially in each maze; the number appears to be selected randomly, but it is usually either five or six. Usually between one and three robots will be in motion at the same time. The robots and their missiles increase in speed up to the sixteenth maze. The robots' missiles may be deadly to you, but they don't faze Evil Otto at all; he is completely immune to his minions' missiles.

Game variations allow you to select combinations of the following options:

- Whether the robots are armed or unarmed
- Whether Evil Otto is in the game or not, and whether he is invincible or the "rebound" Otto feature is in effect (this means that you can shoot Otto, causing him to disappear briefly and then rebound back to life)
- Whether or not you get bonus lives, and when

Helpful Hints

THREE ARE NO SURE-FIRE, guaranteed winning patterns to always use in Berzerk. But we believe the following observations and tips will help

you improve your scores.

They Shoot from the Hip

The robots always shoot their missiles from the hip region. If you are on their left or right, the shot appears to be emitted from just off the tip of their arm on your side. If you are above or below them, any shots they fire at you will be from their left arm. Have your eyes trained to concentrate on these areas of the robots when you are in their sights.

The Wall as a Weapon

The robots are programmed to follow you blindly. If they sense your presence, they will shoot and/or ramble straight toward you. You can use this fact to your advantage to lure them into a wall. Try to move rapidly enough to get a wall precisely between them and you. They will then come blindly toward you and run smack into the wall. You have to be agile and skillful to dodge other robots and their missiles to accomplish this feat when there are many other robots on the screen, but it's fun to try.

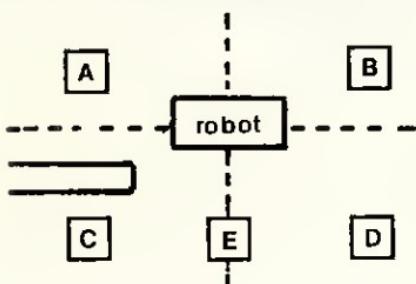
Robot Collisions

In the arcade Berzerk game, a skillful player can often make

the robots blindly run into each other and thereby self-destruct. The instruction booklet for the Atari Berzerk states that you can also accomplish this with the home cartridge. However, this is not an easy task to execute. For those of you who play the arcade game, don't expect this to happen with the same frequency in the home game. A much easier task is tricking the robots into shooting each other.

Sneak Up, Shoot, and Retreat

Since the robots can only shoot in four directions, you can only be destroyed by their missiles if you are precisely straight across, up, or down from a robot. Any of the diagonal positions are safe spots; see points A, B, C, and D in the diagram below.



Our suggested approach is to stay in these safe zones as much as possible, popping out of them momentarily to

launch a missile or to lure robots to destruction. If you are at point C below, then do this: Sneak out from behind the wall to point E, turn and shoot straight upward, and then quickly retreat back to C. Use tactics like this whenever possible, and always try to stay where the robots cannot get at you.

Look First

When beginning a maze, always take a second and inspect the surroundings before you impulsively start moving. Before you enter a new maze, do not press your joystick. If you have the joystick pushed to the right before a maze starts and a robot or a wall appears on your immediate right, then you most surely will collide and lose a life. Since you never know exactly what initial positions will be in any maze, take time to look before you leap.

Starts in the Otto Games

In the Otto games, the robots' ringleader always enters from the spot where you begin the maze. This means that you should never delay in that starting position. When a maze starts fresh, take a quick

look for robots in the immediate vicinity as suggested in the hint above; but after that, do not delay. Move quickly out of your starting area and launch your offensive against the robots. Don't make yourself an easy target for Otto; if you're too near his entrance spot it will be almost impossible for you to avoid him when he enters the scene.

Also, keep that spot in mind and avoid it as the game continues. To be safest from Otto, you should try to keep near the exit which is farthest from that initial point.

Exits Mean Safety

A conservative strategy that can often save your life is to get near an exit as quickly as possible. From there you may be able to lure any remaining robots to destruction, and you can always beat a hasty retreat into the next maze. If you are by the right-hand exit in a maze that also has a left-hand one, you may be able to take advantage of your missiles' wraparound feature and shoot a robot lurking there on the left.

Quick Draw

Here's a pointer that can help

you kill two birds with one stone. When you are about to begin a new maze, hold the red fire button down in preparation for the game action to begin. The dual benefits from this are:

- The button will be down the instant the game action restarts, guaranteeing that you get a shot off at the soonest possible moment. Thus you may gain a slight edge over a potential robot assassin and put him away the moment he appears on the screen.
- The button's being down initially will ensure that you don't move as the game action starts, before you've had a chance to look over the situation.

Hit and Run

In Berzerk it is not unusual for your missile to destroy a robot just as he is releasing a missile toward you. Even though he has expired, his missile may be on its lethal path. Should you be sitting there stationary and admiring your success, there is a chance that it will exterminate you, since the missile continues on its way, even though the robot has ceased to be a threat. Thus whenever

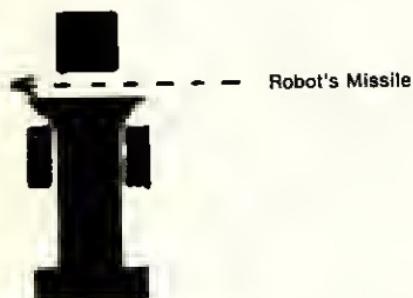
you fire at a robot, it is a good strategy to hit and run. If you hit and sit, it may be your last rest for that game!

Missile to Missile

If your missile actually hits a robot's missile in flight, the two missiles detonate and cancel out each other. This means that a possible defense against an approaching robot missile is to shoot it down. The missiles have such a small cross section that the probability of the two's colliding is low, but in a real pinch this could be a lifesaver. And although you can't rely on it, you may want to try it, just for fun.

Right Through You

Take a good look at your man in the figure below. You will



Robot's Missile

notice that there is a small air gap between the head and the rest of the body, right where

the neck should be. If a robot's shot is approaching you squarely from a horizontal direction, then if you position yourself just right the missile could actually pass right through that narrow gap. If this happens, you will not be harmed!! It's not easy to accomplish this, but in a tight situation it's easier to achieve than shooting a robot's missile.

Robot Particles

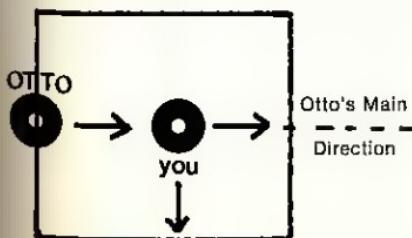
If you collide with a robot—if any part of you contacts any part of him—you lose an electronic life. But this is not the only way a robot's body can be lethal. Notice that when you destroy a robot, he shatters into a multitude of particles. One characteristic of these particles that many players don't realize right away is that contact with any of them is just as deadly as contact with a whole robot. Therefore when you obliterate those enemies, clear the area. Watch out for those small but lethal robot particles!

Otto's Main Direction

Evil Otto enters from various sides of the maze and begins his path across the screen at

right angles to that side. Let us call the direction he takes "Otto's main direction." Traveling in his main direction, Otto's speed is exactly the same as yours. If you flee from him along that path your speed stays the same as his and you can maintain any lead you have over him. On the other hand, if you flee in a direction at right angles to his main direction, his relative speed is faster than yours and he can catch you.

Refer to the drawing below. If Otto entered from the left side, his main direction would be horizontal. If there were an exit at the right side and you immediately fled toward it from screen center, you would be able to maintain your lead and reach the right exit safely before Otto caught you. If there were an exit at the bottom edge and you fled toward it from screen center, Otto's speed would be greater than yours and he could easily get you before you got to that bottom exit.



In summary, fleeing in Otto's main direction is preferable to fleeing at right angles to his main direction. Of course, you always have to flee toward an exit; it does you no good to outrun Otto only to sizzle against a wall.

Never Go Back

When you start a new maze, never back up. If you do, you will find yourself contacting the wall immediately behind you, resulting in sudden death. When a maze starts, go into the maze or sideways; don't go back.

The Last Robot

Elimination of all robots in a maze earns you ten bonus points per robot, in addition to the standard points accumulated for each robot. However, you must not leave the maze too quickly after the destruction of that last robot. If you leave the maze before the point total has flashed on the screen with bonus points, then you don't get those bonus points (you still get the normal points per robot, however). Thus whenever you finish off the final fiend on the screen, make sure that your exit doesn't occur so fast that you

miss those hard-earned bonus points!

Invincible Otto

This hint applies primarily to the Invincible Evil Otto games. Shooting Otto in these games does no good; all you can do here is flee for an exit.

To illustrate this point, let's talk about the specific case where Evil Otto will be entering from the left. The same general idea applies, however, for Otto entering from any side. If Otto is to enter from

the left and there is no maze exit at the right, you will have to flee from him by heading for a top or bottom exit. But this means that you will be going at right angles to his main direction, and he will be able to outrun you. Your best bet here is to launch your offensive from very near the exit. When you first see Otto appear, forget trying to nail the surviving robots and just head for safety. The farther you are from that exit, the better chance Otto has to get you.

Combat

COMBAT IS THE GAME CARTRIDGE that comes included with the purchase of each Atari control-console unit. It is therefore the one game that appears in more households than any other Atari game, and the first one that many people play.

Descriptive Information

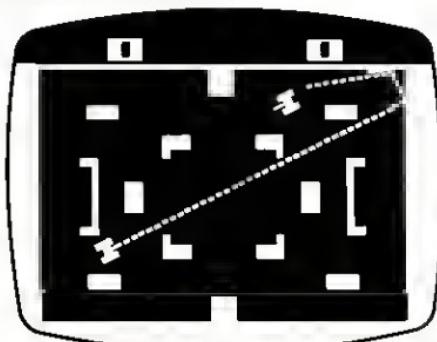
ALL OF THE TWENTY-SEVEN Combat game variations involve confrontations between two human players — one person cannot choose to play against the computer. Depending on the game variation chosen, the players control tanks, biplanes, or jets. In the tank games you can rotate the weapon to any of sixteen directions (north, south, east, west, and three distinct positions between each of those). This means that you can't fire in the complete circle that would enable you to always hit the opponent by simple rotation (provided you were close enough).

You must also push the joystick forward to travel to a point where you can hit him.

The button on the joystick controller fires a missile at the opponent.

Each game lasts precisely two minutes and sixteen seconds. The player who hits his opponent more than he himself gets hit emerges as the winner. Scores are displayed on the screen throughout the entire game, and the numbers flash during the last sixteen seconds of the game as a warning to both players.

The game board shown in Figure 12 is the one used in games 4, 5, and 7. Tanks are the weapons, and there is a set of shields behind which players may maneuver and protect themselves from each other's missiles.



Options

COMBAT OFFERS A VARIETY of game features, selected according to the game number as indicated in the instruction booklet. The important features and their meanings are discussed here.

Weapons

Games 1-14 involve tanks, the slowest-moving weapons; games 15-20 have biplanes, and games 21-27 use jets. Weapons' characteristics, helpful hints, and strategies for the three different categories of games are discussed in some detail below.

Billiard Hit

This feature of Tank-Pong games lets you deflect (bounce) your missile off a wall or shield in the maze; the missile is deadly to your opponent only after it has first hit an obstacle. The deflections follow standard rules of geometry (just like the bouncing of a rubber ball off smooth walls) with one exception: If you fire head-on into a wall, the missile deflects slightly to the right.

Direct Hit

In Tank-Pong games, the "direct hit" feature means your opponent may be wiped out by a direct hit from your missile as well as by a regular "pong" hit.

Guided Missiles

In the guided-missiles games, the missile starts off in the direction your weapon is facing, but can be steered during its flight. Moving the joystick to the left or right makes the missile curve to the right or left during its flight. This maneuver is used to (1) try to track your opponent should he attempt to evade your missile, or (2) try to curve your shot around the obstacles in the maze. It should be noted that when you move the joystick to curve your missile, your weapon (tank, biplane, or jet) also rotates in that direction.

Machine Guns

This option applies only to biplane games. Normally you can have only one shot on the screen at any instant; you must wait for a shot to either hit its target or finish its travel before firing another shot. In the machine-gun option,

holding the fire button down sends out several shots per second in machine-gun fashion. This lets you have several missiles on the screen at any one time. The range of these missiles, however, is much shorter.

Open Field

This option gives you a game board with no obstacles, no maze. The field consists only of you and your opponent; there's no hiding place!

Easy Maze

In the easy-maze game, there is a relatively simple maze consisting of six barriers.

Complex Maze

In the complex-maze game, the maze consists of fourteen barriers or obstacles, making it more difficult to weave your way through the maze and track down your opponent.

Clouds

This applies only to jet and biplane games. This option places a cloud to the left and the right sides of the center of screen; they remain there as permanent fixtures. As the jets and the biplanes enter a cloud they disappear from

sight, reappearing again as they emerge from the other side of it.

Tank Games: Details and Strategies

THREE ARE BASICALLY three variations of tank games:

- (1) Regular Tank games;
- (2) Tank-Pong games, allowing billiard hits;
- (3) Invisible Tank games, in which the tanks are invisible except when they run into an obstacle, when they have just fired a missile, or have just been hit.

You must remember that in tank games there is no "reverse" control. To back up, you must rotate 180 degrees clockwise or counterclockwise and then push the joystick forward. You should practice this maneuver until you can execute it quickly. It can be a lifesaver at times when you are subject to repeated bombardment from your opponent.

A series of helpful hints and strategies for the tank games follows.

The Shooter Clicks One Counterclockwise

Whenever you shoot your op-

ponent, your direction changes. You automatically rotate one position (one "click") counterclockwise. Thus, as your opponent is spinning helplessly, be mentally prepared to click one position clockwise as soon as you are able. This resets your direction to the same winning angle from which you were just successful. If your opponent doesn't react quickly, you should be able to nail him at least once more. Just keep repeating the winning sequence: Click one clockwise, fire. Try to strike quickly and repeatedly, building up as big a score as you can before he recovers. If your opponent spins off the screen, of course he reappears back around the opposite side of the screen—which ruins the plan!

The Victim Clicks Three Clockwise

When you are hit, you spin helplessly for a brief moment and then regain your composure facing three clicks clockwise from your original direction. While you are spinning, be thinking "three clicks clockwise" so that you can anticipate your next move. If the three clicks clockwise would face you directly into a wall,

then you must press the joystick in anticipation to get you to move freely as soon as possible. In general, press the accelerator as soon as possible to produce movement, thus making it more difficult for your opponent to rack up a series of quick points. Move (and/or rotate) absolutely as quickly as possible. This is a must when recovering from hits!

Don't Waste Any Shots

Always remember that you cannot fire another shot while one of your missiles is still in flight. Therefore, never shoot when you have no chance of hitting the opponent. All that does is simply risk your not being able to fire should a good opportunity arise a split second later. Save your ammunition, and plan carefully. Don't shoot blindly.

Be Hit Near a Wall

If you know that you're going to be hit, try to position yourself near a wall. This way your opponent will not be able to do a repeat performance easily, since you will be blasted through the wall and reappear on a different part of the screen.

Avoid the Corners

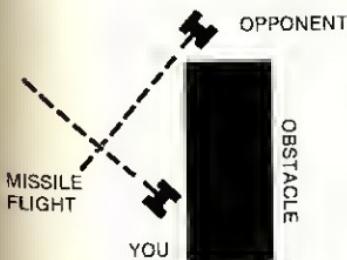
It is usually best to stay away from the corners of the screen, where it is easier to get trapped. If you must be against an outside wall, stay near the flat side of the wall in the middle (away from the corners). You'll be better off in the long run!

Keep Your Distance

Unless you are extremely skillful, we suggest that you stay away from your opponent. It is easier to make a mistake and get nailed if you are in close to him. Keep a safe distance between you and him; let him commit himself.

Sneak Out of the Trap

Assume that your opponent has you trapped around an obstacle as shown in the diagram below:



If your opponent takes a shot at you in this situation, here's

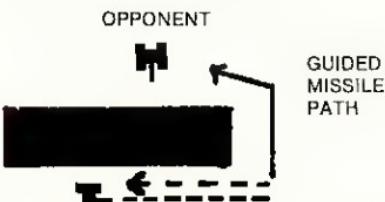
a possible escape route: Wait until the shot just passes by and make a break for it as shown by the dotted line in the figure above. This takes advantage of the fact that he cannot fire another shot while one of his missiles is still in flight. You have a brief instant in which to run for it!

Some Guided Missile Thoughts

If you want to succeed at guided missiles, there is no substitute for practice, practice, and more practice. You must be able to control and curve them precisely. Whoever can control the curves, wins the game.

You can shoot around corners by curving the heck out of the missile. However, the angle of the bend can never approach 90 degrees (a right-angle bend). About the most you can hope to execute is a 45-degree turn.

One approach to shooting around corners is illustrated below. With you and your op-



ponent on or near opposite sides of some obstacle, you might try to sneak out as shown by the dotted line. Then quickly rotate upward, fire, curve the missile, continue rotating counterclockwise, and scamper back to safety. This can succeed, but you must strike like a panther in the night and be careful. Note that curving the missile actually helps you rotate to the proper angle for retreat back behind the obstacles. The curving helps you in two ways here.

Stall Tactics

If you have a lead and the game is drawing near its end, you can simply stall and finish the winner. If you want to stall, try to maneuver into a position where you are exactly opposite your enemy with regard to one or more obstacles. Once in such a position, you should simply do the opposite of what he does: If he goes left you go right and vice versa. To be totally prepared for this, always keep your tank pointing in the opposite direction, and be ready to thrust forward.

A Few Guidelines for Tank-Pong Games

TANK GAMES WITH THE SPECIAL billiard hits are in a category all by themselves. Your mind has to work quite differently in these games. Special dangers lurk in the maze on these games, and therefore specialized skills are required. Here are a few thoughts to guide your play:

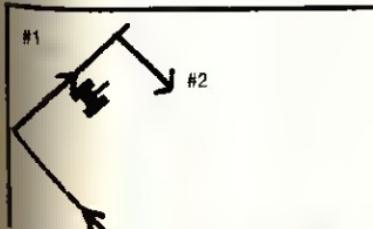
There's No Substitute for Knowledge of the Angles

He who knows how to play the angles and is most familiar with the angles wins this game. There is almost no substitute for pure experience in this game. You have to know how to predict angles resulting from shots starting off in any particular direction. You have to be constantly looking ahead and projecting where your shot will end up in the next second or so (after the next bounce or two). Try to keep your "psychic" hat on and look into the near future as you play the game. You must always be doing this, and from all areas of the board. One good way to acquire such "powers" is to have

practice sessions alone, where you can just shoot and observe, undisturbed by the presence of an opponent who is trying to blow you off the board. Always have the enemy's "potential bounce paths" in your mind and try to imagine them burned into the TV screen.

Corners Are Extra Deadly

Corners in regular tank games can be bad news, since your movement is so limited as you near them. In Tank-Pong games, corners are even worse. Not only do they restrict your movement, they also allow an enemy missile an extra chance to hit you. The enemy missile has chance #1 as it bounces from one wall to the other, and chance #2 as it returns. This is illustrated below:



Short One Time, Short the Next

Assume that you have just fired a billiard shot that has bounced around and then fizzled out a tiny bit short of your enemy target. Your first

thought might be to keep your tank facing the same direction, creep just a bit closer to that first wall the previous missile has hit, and fire again. This makes good sense and is quite logical; however, there is something programmed into the game that overrides this logical deduction. If you creep closer and refire, the shot will still be short! Once you are convinced of this fact, you will not waste ammunition and effort in any such futile attempts.

Avoid the Walls

On billiard tank games without direct hits, stay away from the walls. A missile could pass through you without doing any harm, but come back to nail you on the rebound.

Invisible Tank Games

THE INVISIBLE TANKS ARE visible only when they bump into an obstacle, when they fire, or when they are hit by enemy fire. The main strategies here are to be as invisible as you can from the enemy's viewpoint, while making yourself visible at certain times which are important

to you. Sometimes you want to intentionally become visible so that you can see in which direction you are pointing. Feel and intuition play important roles in this game. Again a certain amount of apparently psychic power is the key to success.

Last Direction and Feel

You must always remember your last visible direction and, from a feel for how many clicks you have made either clockwise or counterclockwise, know the direction you are currently facing. The number of clicks can be best "felt" if the turning clicks are made by firm, rapid movements of the joystick. Be thinking, "last direction plus clicks"; maintain a mental image of what you believe to be your current direction.

Judge the Speed

Another factor which you must be able to judge blindly is how far you travel when you hold the accelerator forward for a certain time interval. You have to be familiar with the speed from experience, and picture the tank moving as you thrust forward. Try to get a rough idea of the

distance per second; use that distance as a base to judge total distance traveled by then approximating how many seconds you are in motion. Again, if you are having trouble judging, practice alone where you are free to fire almost any time to become visible and therefore will have assistance in learning.

Hit and Run

A good strategy in the invisible tank games is "hit and run." With it you shoot at the enemy to show your position briefly, and then run for a distant corner or side of the board. The idea is to always try to go to a point very far away from where the opponent last saw you. The general impression the enemy gets is that you are everywhere; he will have a really difficult time trying to estimate your position. This idea is handy for situations where you are ahead and are trying to "run out the clock" to obtain final victory.

Stalling Is Easier

Stalling to run out the clock is easier in invisible tank games, for obvious reasons. The leader may often be temp-

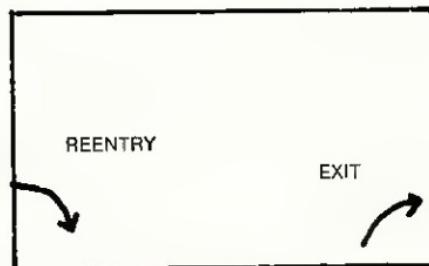
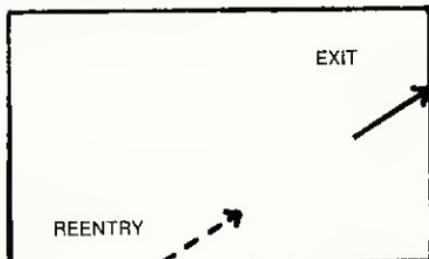
ted never to fire a shot, simply to remain invisible for as long as possible and not to play any offense. This works well, especially in the open-maze games. In the maze games, of course, you must avoid the walls and other obstacles. If you do bump into one and show yourself, turn and accelerate quickly to maintain distance between yourself and your last visible spot.

Jet Fighter Games: Details and Strategies

THE GENERAL IDEA IN THE jet fighter games is the same as in the tank games. You are also observing the weapons from above. When you push the joystick right, the vehicle rotates in the clockwise direction. Pushing the joystick ahead accelerates the jets, which are constantly moving across the screen.

Since the jets are in constant motion and can exit the screen by going out through one edge, they reappear at the "opposite" edge. The opposite edge here and the point of reentry is determined by extending the exit direction in a

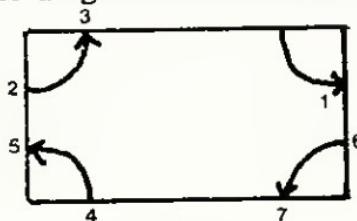
backward line until it hits one of the other edges. The reentry points are shown below for (1) the straight line exit and (2) the curving exit:



You must become completely familiar with this wraparound effect to play the game well.

Wrap Around the Four Corners

Study the wraparound diagram shown above for the curving exit (2). This can be applied repeatedly so that your jet will keep jumping from corner to corner. When this is done you travel as shown in the diagram below: You exit



the northeast corner at point 1, enter the northwest corner at point 2, exit it at point 3, enter the southwest corner at point 4, exit it at point 5, enter the southeast corner at point 6, exit it at point 7, and eventually get back to the northeast corner from which you started. (The pattern is similar to that used in the Asteroids game.) This tactic should not be used for a long time during the Combat jet game, lest your opponent eventually detect the pattern and predict your next entry point and have a missile there as your welcoming committee. Mix it up with some of your other favorite moves to keep your enemy confused.

Stay Behind Him

One of the most fundamental strategies used in the jet games is to stay behind your opponent. Once you get in that enviable position, it is very difficult for him to hit you, and very easy for you to hit him. Thus in the dogfight that results in this game, continually strive to slow down, turn back and forth, or do whatever is required in order to let him pass. Somehow, get behind him. If you use the corner-to-corner wraparound

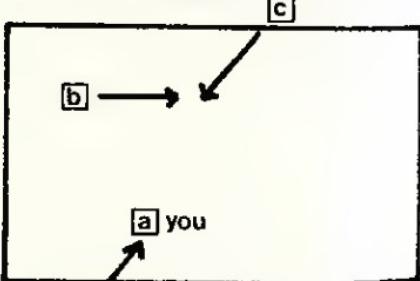
discussed above, you should find many opportunities to come out nicely into a position behind your opponent and blast him!

Know Those Wraparound Angles

Your exact angle when you leave the screen determines the precise point of reentry. You must know the wraparound angles!

Shoot Via the Wraparound

If you are about to leave the screen with the opponent well behind you, you can still make use of the wraparound effect as it applies to your missiles. See the diagram below. You



are at point **A** and are about to leave the screen at the bottom. Your opponent is at point **B** and is flying left to right. Even though the opponent is apparently behind you, all is not lost. Your missile will leave the screen at the same angle you do and is subject to the same wraparound rules. If fired at point **A**, it will

reenter the screen at point C and proceed along the dotted line to intercept the enemy jet. Remember this strategy and try to use it often. There will be many times during a typical jet fighter game when this can be used.

Find the Invisible Zone

Here's a defensive strategy that works well. It can be executed late in the game if you have a lead, for example. Or you might just want to experiment a bit with the idea. Across the very top edge of the screen, there is a zone in which your jet becomes almost invisible. If you have found the precisely right height and are going straight across, only the tip of your wing will be visible. It may take you a few attempts to locate the exact spot, so be patient while finding it. Once you get there, you just cruise.

One note of caution: With only the tip of the jet's wing showing, it will be quite difficult for your opponent to hit you, but it will still be possible. Once your opponent sees what you are up to, he may try to shoot based on predicting your movement. Therefore we suggest cruising across the in-

visible zone at some intermediate speed (not the slowest, not the fastest). Then you will be able to speed up or slow down to avoid any missiles that might be coming close to you.

Biplane Games: Details and Strategies

LIKE THE JETS, THE BI-planes move continuously across the screen without stopping. They exhibit the same wraparound effect. As their name implies, the biplanes are somewhat slower than the jets. The missiles of the biplanes have about the same range as the missiles of the jets.

The biplane games take some getting used to because the controls work differently than they do in the tank and jet games (which is why we are discussing them last). In the biplane games, they work as follows:

- To rotate clockwise, push the joystick up (away from you)
- To turn counterclockwise, pull the joystick down (toward you)
- To accelerate, push the joystick to the right

It seems as though Atari has done this just to put some extra confusion (and challenge) into the combat games.

Many of the strategies from jet and tank games apply also to biplane games, but there are some new ones.

Get Behind Him

Still the most fundamental strategy is to maneuver such that you position your biplane behind the opponent's. This makes it safe for you, and dangerous for him.

Know the Controls

You must be completely familiar with the controls, or else face gametime frustration. Because of the differences in the biplane controls, the game will probably require extra practice of manipulation.

Know Your Opponent

As in the other games, be on the lookout for habits of the opponent, especially for the habits that are used most often against you. Being able to predict an opponent's moves, even just two or three times in the game, can be very valuable.

Find the Invisible Zone

The same observations and hints offered in the jet fighter discussion apply here.

Use Those Clouds

In the cloud games, two fairly large clouds remain on the screen throughout the entire game. The biplanes are not visible while they are in the clouds. The clouds can be used to your advantage in a couple of different ways. One maneuver is this defensive one. You could go into a cloud, circle sharply and constantly in either the clockwise or the counterclockwise direction, and keep your speed slow. This allows your entire flight pattern (almost) to be within the boundaries of the cloud, so that you stay almost invisible! Another use of the cloud is for purposes of "faking out" your opponent. Go into the cloud at one speed and a certain direction, and the moment you enter (or even as you are entering), change suddenly both in speed and direction. Do this randomly, sometimes one way, sometimes another. This makes it extremely difficult for your opponent to predict your next move. Keep him guessing, and

go to the attack as you exit from the cloud; be bold.

Machine Guns

The biplane games have some variations that contain the machine-gun feature, allowing rapid fire of several missiles at a time. This makes an extremely nice weapon, but take note of the fact that there are certain times when your machine gun would do best to remain silent. These are (1) at times when you wish to remain invisible in the clouds, and (2) when you wish your entrance back onto the screen

to be unannounced.

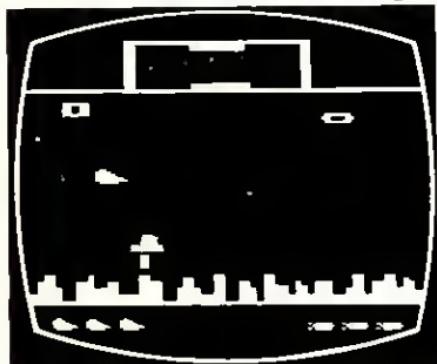
Make Your Own Rules

THIS LAST WORD OF ADVICE applies to all Combat games: Many times a good player can have a one-point lead and stall for most of the game, thereby winning. Since it is a relatively easy matter to stall in many games, you may want to agree in advance with your opponent to play until someone reaches a specified number of points, rather than playing for a specified time limit as is usual.

Defender

Descriptive Information

DEFENDER WAS ATARI'S sensational smash hit for the summer of 1982. It is a natural follow-up to the highly popular arcade game of the same name. You control the spaceship Defender, and your mission is to protect your Humanoids on earth below you from onslaughts by several forms of alien beings.



The game screen (see above) depicts a profile of part of the earth and the sky above it. Tucked into the city skyline at the bottom of the screen are Humanoids, and in the middle of the screen there is an assortment of aliens—six different kinds in all. At the top of the screen a long-range

scanner is shown; this represents the entire territory patrolled by the player of the game—the detailed picture that occupies most of the TV screen shows only a fraction of the environment at a time.

Defender is played with the joystick controller. The stick controls the direction of the spaceship, which can be mobilized in any of the eight possible directions typical of the stick. The red button serves one of three functions, depending on the exact position of your spaceship:

- If the ship is anywhere in the middle of the screen, the button fires missiles that travel horizontally in the direction the ship is facing.
- If the ship is at the bottom of the screen, the button detonates a smart bomb, which demolishes every alien being currently on the screen.
- If the ship is at the top of the screen, the button lets you execute a hyperspace time warp. In this bit of elec-

tronic magic, your ship disappears and subsequently reappears at some randomly chosen location. This provides temporary relief from enemy onslaught, although you never know for sure where you will end up (but see our comments under "Hyper Reappearing" on page 73).

Aliens

There are six different types of aliens with which you must contend: Landers, Bombers, Pods, Swarmers, Mutants, and Baiters. Their characteristics are varied, affecting how you have to deal with each. There are however, a number of traits they have in common:

- The aliens do not shoot straight horizontally or vertically; they only shoot along the diagonal directions.
- They don't destroy each other by their fire.
- Each can have no more than one shot on the screen at a time.
- If they contact you, you are both eliminated.
- Any aliens that can be added during a wave (Landers and Baiters) appear from the side of the screen.

- Only Bombers, Baiters, Mutants, and Landers with Humanoids can move straight upward.

- You destroy aliens by firing missiles at them or detonating smart bombs.

The specific alien types are now described:

Lander



This is the slowest alien and is worth the fewest points. It is the only one that can capture Humanoids. Each remaining Lander becomes a Mutant when Mutant-takeover conditions are reached (i.e., when all your Humanoids have been captured). There are more Landers than any other type of alien, prior to Mutant takeover; after Mutant takeover, all Landers are converted into Mutants.

Bomber



This is the first alien to appear

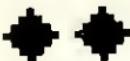
in the rightmost sector of the total environment. There is only one Bomber per wave. Bombers don't shoot any missiles; instead they occasionally leave mines in their trail. You are "lateralized" if you contact one of these before it vanishes. A Bomber is very slow and is the easiest alien to hit; it should probably only be the object of your attention if you have nothing better to do.

Pod



This is a strange being indeed. It floats slowly about, without firing shots at you. You must eventually shoot the pod, and when you do it breaks into two groups of four swarmers each.

Swarmers



These fast little ships occur in groups of four. They result only from the destruction of a Pod. They travel as a group, shoot as a group, and die as

a group if you hit one of them.

Baiter



The Baiter is shaped something like the side view of a "flying saucer." Because it's so thin, it is difficult to hit and is the most dangerous alien. The Baiter will appear only when the Atari computer thinks that you've taken too long to finish the current wave. It is fairly fast and shows signs of intelligence—that is, it is good at tracking you.

Mutants



Mutants are "reincarnated" Humanoids that have been taken from you. A Mutant appears only after one of your Humanoids has been captured or during a Mutant takeover. The Mutant aggressively pursues the space ship Defender. They fly more slowly prior to Mutant takeover than they do after it.

Scoring and Game Play

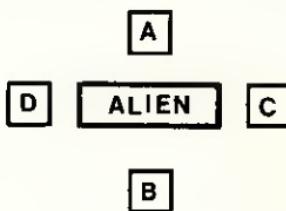
YOU BEGIN THE GAME WITH three lives and three smart bombs. You accumulate points as you eliminate aliens (Pods, Swarmers, and Bombers are worth the most), and you gain additional points for any Humanoids you rescue from the grasp of Landers. You are awarded an additional "life" (spaceship) for every 10,000 points you total; you can store any number of extra ships, but the screen can show a maximum of three. You get five additional Humanoids every fifth "wave" (a wave is defined as the portion of the game where you clear the total environment of aliens). Once all your Humanoids have been captured or killed, "Mutant takeover" conditions hold and future waves consist of Mutants only.

Helpful Hints and Information

Stay "Square" with the Aliens

THE ALIENS SHOOT MISSILES at you relentlessly. However, there is one

characteristic of their shots that works to your advantage: They never travel exactly straight up and down or exactly horizontally. The shots always travel at some diagonal angle. Therefore you can position yourself exactly "square" with an alien and be in a safe spot. Exactly above (A), below (B), to the right (C), and to the left (D) are the safe spots:



The Best Defense Is a Good Offense

During the brief fraction of a second when you fire one of your missiles, you are temporarily immune to enemy fire. This effect is similar to the use of a shield in Atari's Asteroids game. Thus when an enemy missile is about to hit you and you have no time to maneuver out of the way, fire a shot in any direction just before the shot is about to hit you. If your timing is right,

the alien missile will pass harmlessly.

Keep It Moving

The faster you fly (all other things being equal), the more difficult it will be for those devilish demons from space to blast you. It therefore makes good sense to fly as fast as you can without losing control. Don't be too reckless, however, since you can also lose your ship by colliding with an enemy flying object.

You Can't Hurt Humanoids

The Landers capture your Humanoids from time to time and try to carry them upward to outer space. During this attempted kidnapping, the Humanoid is attached to the Lander. Your job at that point is to zap the Lander before it gets to the top of the screen, causing it to release your Humanoid. When you shoot at a Lander carrying a Humanoid, don't be timid in your fire. Your missiles cannot hurt the Humanoid. Fire away!

A Short Fall Is Okay

When a Lander carrying a Humanoid is blasted, it drops its captive and the Humanoid

falls toward earth. If the Lander has been destroyed close enough to earth, the Humanoid survives the fall. The precise maximum height for this free-fall survival has to be judged by the player from experience. It seems to be about one and one-half inches on a nineteen-inch television.

The Tip-off Before the Kidnapping

If you study the behavior of a Lander, you will notice that it exhibits certain signs just before attempting a capture of a Humanoid. Here's what to look for:

- If you are stationary: If the Lander starts to descend straight downward, it means that he's about to get a Humanoid.
- If you are moving: If the Lander starts to move in a very uneven, jerky, back-and-forth motion, its next move is toward a Humanoid.

If you see either of these two signs, be prepared to nail the Lander or go to the rescue.

Point Max

You get 150 points if you mug a Lander prior to its kidnapping a Humanoid. However,

if the Lander has already captured a Humanoid and you rescue the Humanoid and return him safely to earth, you get 1,000 bonus points. Thus the way to maximize your point total is to eliminate as many non-Lander aliens as you can, allowing some Landers to survive and begin capture maneuvers. Then with the skies clear enough of the other types of flying foes, perform the rescue mission: Nail the Lander, contact the free falling Humanoid with your spaceship, and then fly back down to earth. Presto: 1,000 extra points.

Put Them Anywhere

When returning Humanoids to earth following a rescue mission, don't be too concerned with precisely where on earth you place them. Some players try to place them close together so that they'll be easier to defend and protect. However, after you place Humanoids back on their native planet, they tend to spread out automatically. Since this spreading out is beyond your control, any effort to carefully place them is wasted.

Set Your Altitude Via the Scanner

The long-range scanner is a great visual aid that shows you at a glance all the beings in your entire territory. One of the most important uses of the scanner is to show you what unfriendly forms are immediately to the right and left of your field of enlarged vision. You can tell the exact altitude of any aliens that are just off the TV screen and are about to enter your detailed-vision area. When flying to the right, always keep an eye on the scanner to see what is about to appear from the right, and set your altitude accordingly to get ready to annihilate that alien. Of course, the same applies when flying toward the left.

Bombs from Out of Nowhere

Normally enemy missiles appear to leave the alien device that fires them. In other words, a missile fired by a Lander usually appears to come from the Lander. There are special times, however, where this is not necessarily the case. When a Lander is very near the top of the TV screen, a bomb will sometimes come diagonally downward from a spot at the top of the

screen a short distance away from the alien Lander itself! In other words, the bomb appears from out of nowhere and might catch you by surprise. In all cases where a Lander is near the top of your screen, be prepared for a bomb to exit from the top edge of that screen.

Be Smart with Smart Bombs

The smart bomb is a powerful device indeed, capable of putting several aliens on ice with a single flick of the thumb. However, your stock of these is limited (three per game, initially), and should not be wasted. Use them wisely. When you are down to your last ship and are in real trouble, you may have to burn one up. Another good time to use the smart bomb is when you are in distress and are drawing very near to a 10,000-point mark. In this case, the use of one smart bomb would not only get you out of the immediate trouble but it would also obtain another smart bomb for future use as you cross the magic multiple of 10,000 points.

No Loitering

Landers frequently use the

wraparound feature of travel which permits them to descend to the bottom of the screen, disappear, and subsequently reappear at the top edge of the screen. Because of this, you should not linger around the top edge of the screen. In fact you should not linger much anywhere, but if you have to hang around, don't do it near the top. Anytime you are near the top of the screen, even if you are moving, be on the lookout for descending Landers near your general part of the screen.

Underground Route

If you lower your spaceship just beneath the bottom edge of the TV screen, there is a narrow horizontal zone where you become invisible. Once in that zone, you can travel left or right without being spotted by aliens. You can travel safely to any part of the entire Defender world, and then rise back into the screen and fire away. This way you are not vulnerable to enemy missiles during your trip. Do so as often as you like: Travel underground, pop up, and shoot; travel underground, pop up, and shoot; and so on.

You may also want to stay

low and pop up to fire during Mutant takeover.

Carry That Humanoid

Once you have caught a free-falling Humanoid and he is on your ship, there is no immediate pressure to return him directly to earth. You can carry him around on your ship, continuing your aggressive maneuvers against the aliens. One advantage of carrying a Humanoid around is that neither he nor any other Humanoids can be captured while such a ride is taking place, so you may want to piggyback him around for quite a while. This strategy can be especially helpful toward the end of a wave, to prevent complete Mutant takeover.

Hyper Reappearing

The Atari instruction booklet for Defender states that following hyperspace time warp you reappear at some random location on the screen. However, our experience has shown that you will usually reappear (in the same sector in which you disappeared) in the lower left-hand quadrant of the screen. We have also observed that when you reappear you are

always pointing to the right. During the brief moment when you are not yet visible, check that quadrant and be planning your next move. Also check the long-range scanner to see what might be approaching you from the left.

Cloud with a Silver Lining

If the kidnapping of a Humanoid is currently in progress and you get wasted by an alien, this is no cause for celebration. However, there is a small bright side to such a happening: That Humanoid is automatically saved and is returned to earth.

Distress Cry from Afar

The Atari instruction booklet states that a Humanoid who is being captured emits a cry of distress which sounds something like the chatter of an excited chipmunk. This statement is essentially true—assuming that you have a good idea of what an excited chipmunk would sound like, electronically imitated. Anyway, you will soon learn through experience to recognize such a call. One important point to note concerning this is that you can hear

the distress cry from quite far off. If you are currently on the detailed screen for one sector of the Defender territory and a Humanoid is being kidnapped in a distant sector, you will still hear the call for help. Use the long-range scanner as well as your ears for detecting early-warning signs of this incipient calamity.

An Attack from the Rear

After the last of your Humanoids has been captured and you enter the Mutant-takeover conditions, your spaceship will automatically be facing to the right. Right after your arrival into this special situation, turn to the left: There will be some slightly unfriendly Mutants coming to greet you from that direction. So beware of the immediate threat from the left when entering Mutant takeover.

Confusing the Mutants

Here's a little trick that we feel

is an effective tool against Mutants: Jiggle the joystick controller back and forth, left to right, rapidly and repeatedly. This motion seems to confuse the Mutants and helps you lose them.

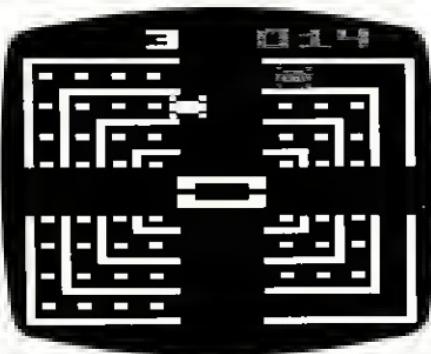
More on the Mutants

During Mutant takeover, the Mutants are continually cruising about all throughout the Defender territory. You don't really have to go searching much for them. Just stay in one spot; and they'll come to you. Wait until they get near to you, maneuver in front or back of them ("square" to them), and blast away.

A Baiter Won't Soon Land on You

If you need a temporary safe spot sometime, try positioning yourself just below the baiter. Follow along with him for a while, staying just under him. After a while he may descend, but for quite a while you'll be safe both from his missiles and from contact with him.

Dodge 'Em



Descriptive Information

THE GAME BOARD FOR Dodge 'Em is shown above. It consists of four concentric rectangular racing tracks. Each of the tracks is broken at four places (at the 3, 6, 9, and 12 o'clock positions) to allow lane changes. Your car begins at point S and continuously moves around the track as you control lane changes with your joystick. In game 1 there is a computer-controlled crash car that tries to collide with your car. The object of the game is to clear all the dots on the track board before the crash car catches you.

The speed of your car is normal or accelerated, depend-

ing on whether or not you depress the red controller button (your accelerator). You cannot stop or reverse the car.

The crash car is intelligent — it tries to change lanes into yours and cause a head-on crash. At each intersection, it can change only one lane at a time. Your car can change one or two lanes at a time when at normal speed; it can only change one lane at a time at accelerated speed.

After you've cleared a board, brilliant flashes appear on the screen and another board filled with dots begins. This continues up to a maximum of fifteen boards. There are two crash cars pursuing you in a clockwise fashion at boards 3, 4, 5, 8, 9, 10, and

13, 14, 15.

If you crash, the board that you were on starts all over again (filled with dots), until your limit of three crashes is reached and the game ends.

There are only three game selections on the Dodge 'Em cartridge. The only one-player variation is game 1, which is discussed here. Many of the concepts, however, apply to the two-player games, numbered 2 and 3.

Helpful Hints

SPECIFIC PATTERNS FOR game 1 will be presented, but first we list a series of guidelines and hints to improve your play.

Begin the Lane Change Before the Opening

If you are on a section of track and approaching an opening at which you wish to turn, begin pushing the joystick in the direction of the turn before you reach the opening. This way you make the lane change without any unnecessary delay.

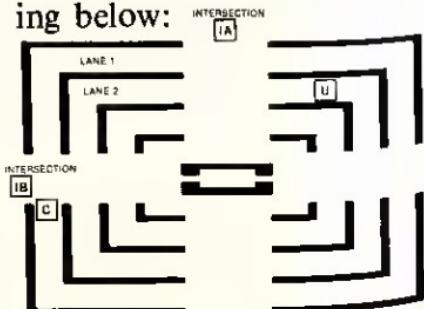
Use the Accelerator to Beat the Crash Car to the Intersection

If both you and the crash car

are approaching the same intersection from opposite directions, and if you are currently at normal speed and want to change only one lane, then you should use the accelerator to be the first one into the intersection. That way not only can you be safely into the other lane past the intersection before the crash car gets there, you also don't have to worry about how hard you push the joystick.

Watch the Second-Next Intersection

Naturally you are always considering turning at the next intersection as you whip around the track. However, it is very helpful to be watching that second-next intersection also. This is important because if you notice how the crash car commits itself at that second intersection into the future, it can lead to a successful decision at the more immediate intersection. Consider the drawing below:



Assume that you are going counterclockwise at **U** and the crash car is going clockwise at point **C**. If you are watching that second-next intersection **E** and see the crash car turn into lane 2, then you can make the correct decision (e.g., to turn upward into lane 1) at the next intersection you reach (**A**).

Slowing Down May Be Necessary

In many situations, it makes good sense to slow down (assuming that you are currently in the accelerated-speed mode). For example, regarding the point above, slowing down at point **U** may make the difference that allows you to see how the crash car commits itself at intersection **E**. Also, slowing down is necessary if you wish to change two lanes to be certain to avoid an approaching crash car in your same lane.

Don't Turn into the Solid Center Block

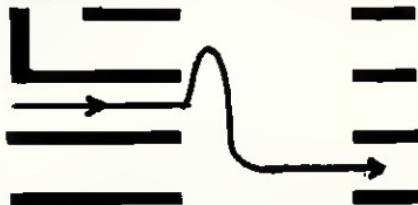
In the innermost lane (lane 4), if you try to turn into the solid block well before the edge, you may be slowed down temporarily. See the figure below:



If you are going right to left, pressing the joystick down at point **B** may cause a very noticeable temporary decrease in your speed. For this turn in the innermost lane, point **A** is the more appropriate place to anticipate the downward turn.

A Fake Turn Is Possible

Going at normal speed into an intersection, it is possible to fake by beginning to turn one way, then reversing and turning the other way. This is a very difficult maneuver to perform consistently, but it can be helpful. See the drawing below:



You must begin the upward move sharply and early.

Patterns

PAGES 78–80 GIVE THE winning patterns for game 1. If executed properly and without delays, they are guaranteed to bring you success.

If you make a mistake and crash, remember that the

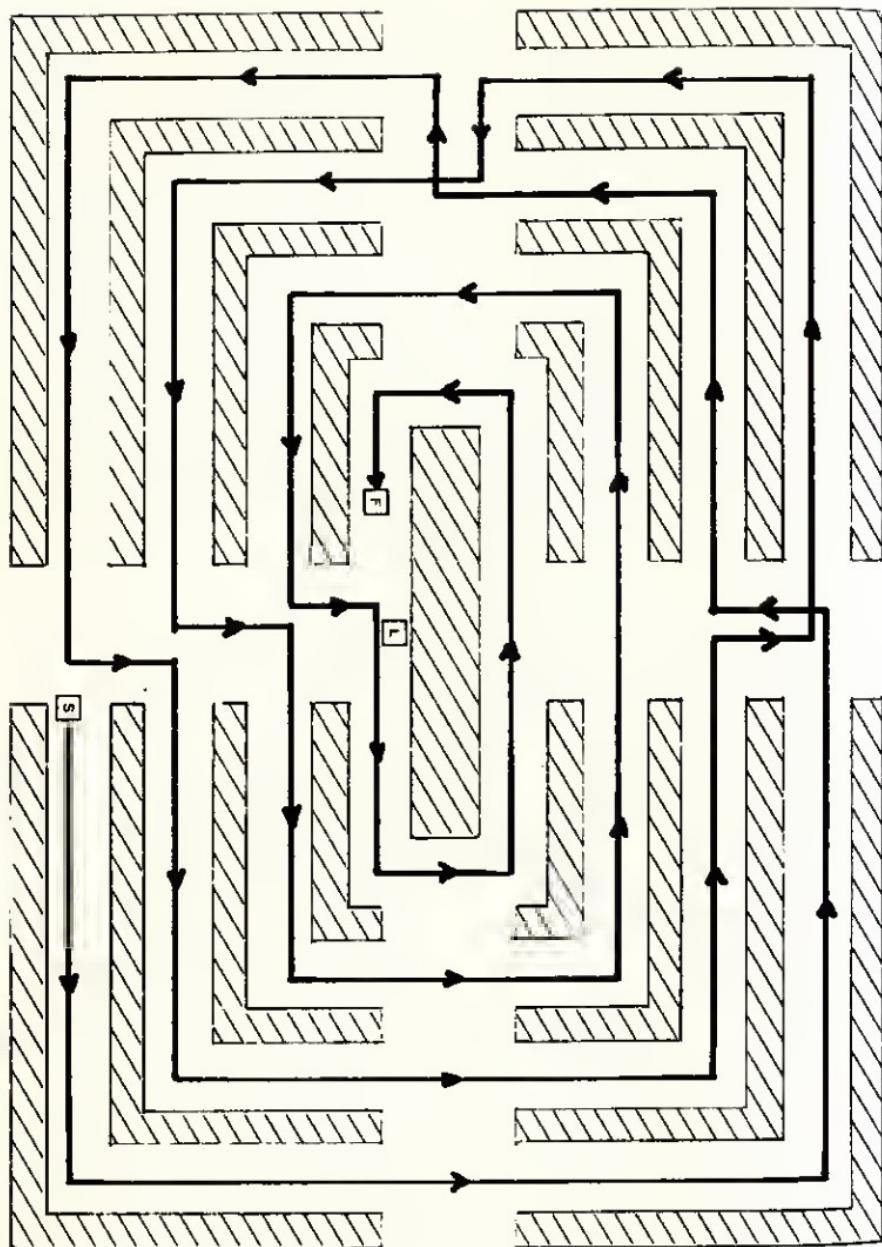


Fig. 13. Pattern for Board 1 (Game 1)

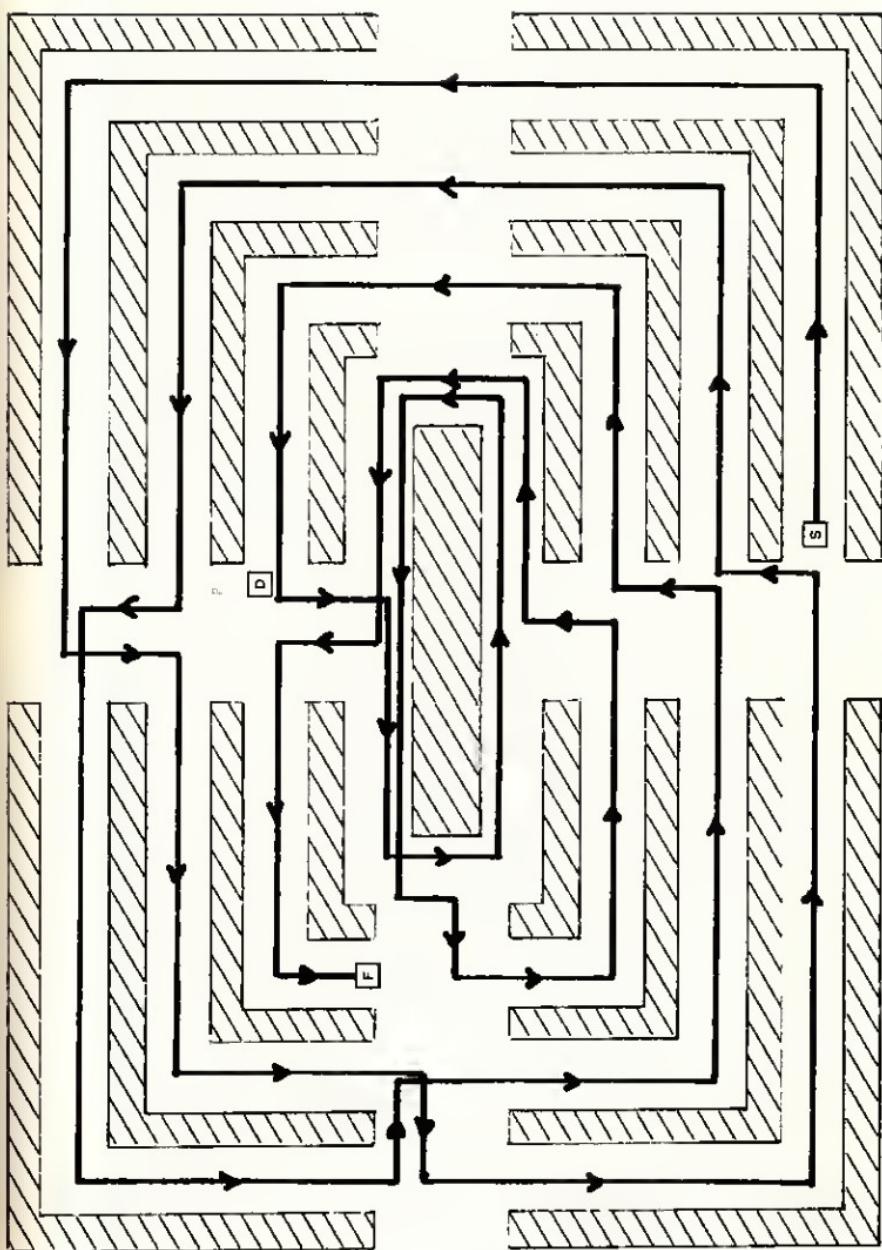


Fig. 14. Pattern for Board 2 (Game 1)

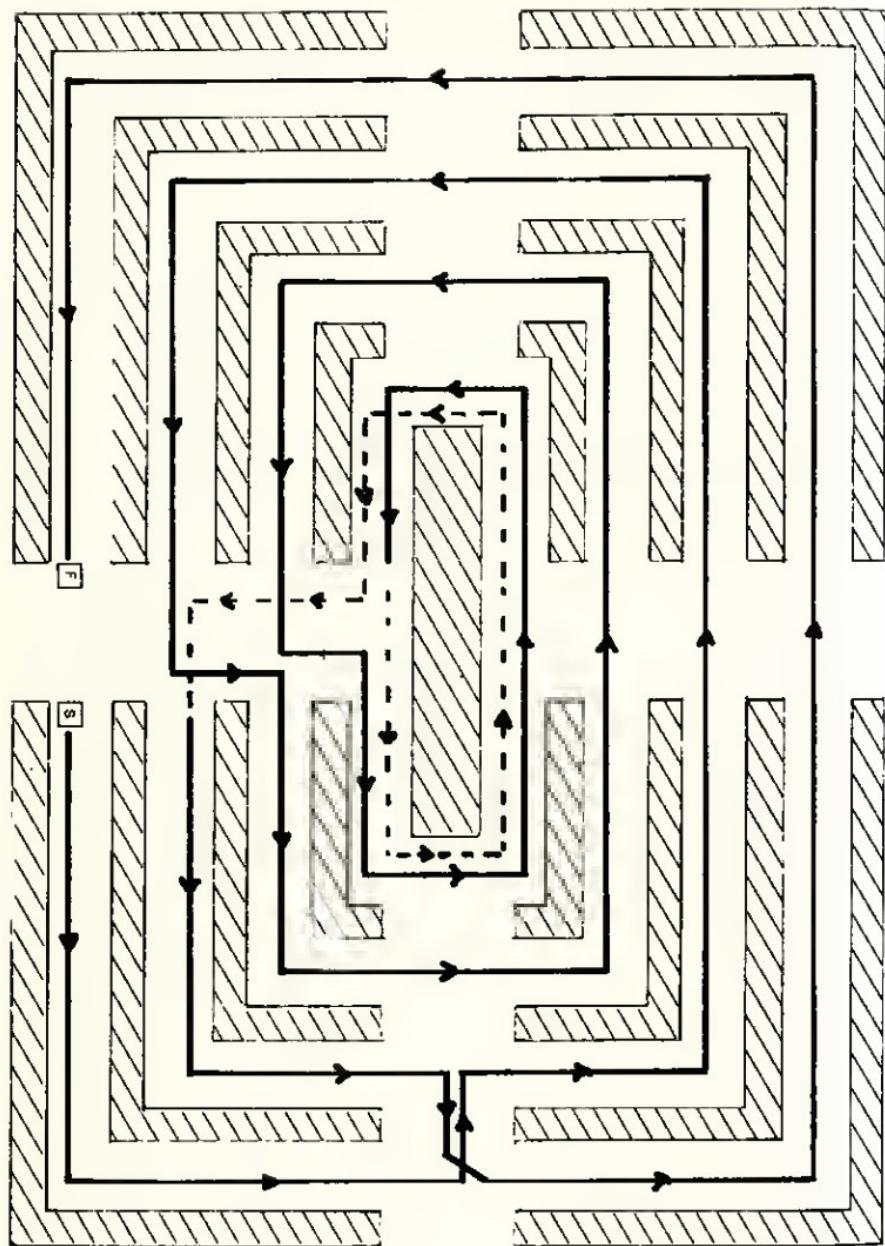


Fig. 15. Pattern for Boards 3, 4, 5 (Game 1)

same board starts over again immediately. Thus be prepared to begin that same pattern over—this time executing it properly!

If you deviate from the pattern but still manage to avoid a collision, then remember the helpful hints given earlier.

Patterns for Game 1

Figures 13–15 show the winning patterns for Game 1. In the patterns, **S** is the starting point and **E** is the finishing point. These patterns assume that the difficulty switch is in the B position. The first pattern shown is for board 1; the second pattern is for board 2; the third pattern is for boards 3, 4, and 5. After that, the same series of five boards repeats itself two more times. Thus for the entire fifteen-board sequence, you would use:

- The first pattern on boards

1, 6, and 11;

- The second pattern on boards 2, 7, and 12;

- The third pattern on boards 3, 4, 5, 8, 9, 10, 13, 14, and 15.

This covers the entire game, since fifteen boards is the maximum that the computer allows you to enjoy in one session.

These patterns require the accelerator button to be activated (down) at almost all times—100 percent of the time for the first and second patterns and for all except the dashed-line portion of the third pattern.

On the first pattern, once you have reached point **D** simply let go of the joystick and the car will finish properly on its own.

Point **D** in Figure 14, the pattern for board 2, marks where the pattern starts to differ from the pattern for board 1.

Missile Command

MISSILE COMMAND WAS one of the early smash hits on the arcade scene. The coin-operated version was made by Atari, who then decided to follow up with a home-video version which—although much simpler than the multiweapon arcade game—has become one of Atari's most popular cartridges.

Descriptive Information

THE GAME BOARD FOR Missile Command initially shows six cities which you have to defend against enemy interplanetary ballistic missiles (IPBM's) and cruise missiles of either the smart or the dumb variety. Your weapons are the antiballistic missiles (ABM's) which are stored in your missile base at the bottom center of the screen. You position the cursor to aim your ABM and then fire it; the ABM explodes at that point, destroying any enemy devices within a certain small "kill radius" of the point of the ex-

plosion. The game objective, of course, is to attain as high a score as possible. You receive points for each enemy missile you destroy. The missiles attack in waves, each successive wave increasing in speed (and points). The end of a wave is recognized by the temporary disappearance of your cursor and a slight break in the action.

Initially you accrue 25 points for each IPBM you eliminate and 125 points for each cruise missile. Unused ABM's and cities still standing at the end of an attack wave also contribute to your point total. They are worth 5 points and 100 points each, respectively. In addition, scoring multipliers are used to increase your points as the waves proceed (details of scoring can be found in the Atari instruction booklet).

During each wave, you have up to thirty ABM's at your disposal. They are sent to your missile base ten at a time. During the defense, you fire

one missile at a time. If your missile base peak is hit by the enemy, all the missiles remaining in the base at that moment are destroyed. A replacement set of ten missiles is subsequently (after a slight delivery delay of a second or two) placed in the missile base for you to continue the defense against the current wave. A replacement set of ten missiles is also sent up to your base each time you use up the current set of ten (up to your limit of thirty missiles during one wave).

Your missiles always travel at the same speed on a given setting of the difficulty switch (on A difficulty your missiles travel slower to create additional challenge). The farther away from your base you place your cursor, the longer the missile takes to arrive at its target. You have to continually judge this speed-time relationship to successfully destroy the enemy.

Guidelines

Start Off Slow

To become familiar with the game and its controls, we suggest that you use the slow cur-

sor (games 1, 3, 5, 7, and so on).

Launch Then Move

When you fire (launch) a missile, it goes toward wherever the cursor was at the moment of launch. Even if you move the cursor away before the missile arrives, it proceeds blindly to the target point — where the cursor used to be. This means that the cursor does no good hanging around after the launch. To become effective and efficient at this game, you must begin moving the cursor to the next target area immediately following each launch. Practice this until you get so good at it that you are practically moving the cursor onward at the moment of each launch.

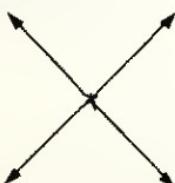
Cursor Constrained

The cursor is constrained to move only in one of the possible eight directions indicated:



Because of this, it can be most accurately moved in the up, down, left, or right direction. Depending on the geometry between the current

and desired cursor positions, you may not be able to get there exactly by going in one of these four "in-between" directions:



Don't Keep Cursor Too High

Players often have a tendency to keep the cursor fairly high on the screen; they do so because they want to nail those enemy missiles before they get close to the cities. This strategy does make sense. However, consider this: The most critical position, and the place where enemy missiles can do most damage, is at the bottom of the screen. If you have your cursor low, then you can attend to these critical areas at the screen bottom. If you have your cursor too high, then you can get trapped in situations where you cannot scamper to the critical defense area in time. Therefore we make this recommendation: Keep your cursor relatively low for best results.

Make Every Shot Count

You can have no more than three ABM's on the screen at

any one instant. If you have three ABM's on the screen and another enemy missile is almost on top of a city, kiss that city goodbye. Therefore always take that extra fraction of a second to make sure that your shots are aimed accurately.

Don't Sweat the "Low Ammo" Situations

As stated above, your missiles are stocked in your missile base in sets of ten. If you shoot four and then an IPBM destroys your base, you lose those six missiles that were left in the base. When the ammunition in the base is low (on the first and second sets of ten), don't be overly concerned about it. If you have, say, one, two, or three missiles remaining in the base (for one of the first two sets), it may be more to your advantage to choose to defend a city rather than to defend your base. Think about it.

Go for the V on Earlier Boards

Sometimes enemy missiles are approaching at angles such that they would meet (coincide) at a certain point below. This approach would result in their meeting at the bottom of

a "V" pattern as shown:



You should plan accordingly and wipe them both out with a single missile that explodes at the bottom of the V. If you do this as much as possible, you will be left with more missiles at the end of each wave and therefore accumulate higher scores. For beginners and intermediates, this technique is recommended only on the early boards.

Some Missiles Are Harmless

If an IPBM lands on any part of the surface which is not occupied by a standing city or your missile base, it does you no harm. Remembering this is helpful in situations where you are getting low on ammunition. Learn to judge the final destination of any enemy IPBM by eyeballing the first couple inches of its flight and projecting it to the bottom of the screen. Choose your targets with care!

Toward the End of Your Thirty, Just Protect Cities

As you are approaching the very end of your total of thir-

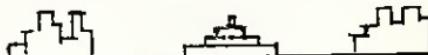
ty missiles for the current wave, use the remaining missiles only to protect your cities, not to destroy missiles that won't do you any harm.

Forget the Outer Cities

Toward the end of waves and later in the game, the outer cities (at the edges of the screen) become too difficult to defend. Protecting them forces you into too much non-productive movement. Thus if you have to neglect some cities, neglect the ones at the extreme sides of the screen.

Pick One

Consider a situation late in the game where you have two cities remaining. Assume that these two are spread out — for example, as shown below:



If this is what you are faced with, then sooner or later it will be impossible to defend both of the cities. In this case you should pick city A or city B to defend, and completely ignore the other. You'll save some shots, and your point total will end up higher. Don't

forget: There's a maximum of three ABM's on the screen at once!

The Best One

If early in the game you want to try to pick one of the six cities to defend, pick the one on the immediate right of the base or the one on the immediate left of the base. This way you are defending one city and your missile base, which are next to each other. This allows you to jump back and forth in minimum time during the defense.

The Best Two

If you want to try to pick two cities to defend above all others, pick either the two on the immediate right of the base, or the two on the immediate left of the base. This way, at the very end when you attend only to the cities (ignoring the base for the last few missiles), you will have them as close together as possible. *Always plan to minimize your movement!*

Cruise Missiles

After the sixth wave of enemy attack by IPBM's and the sixth point tally, you will be attacked off and on by the

devices called cruise missiles. These can be identified by the noise they make, by their dotlike appearance, and by the fact that they leave no trail as they descend. The dumb cruise missiles (games 1 and 2, 5 and 6, 9 and 10, etc.) travel in a straight line, whereas the smart cruise missiles (games 3 and 4, 7 and 8, 11 and 12, etc.) are capable of spotting your ABM explosion and cruising around it or back from it.

All cruise missiles, smart and dumb, will fall to earth only at a city or at your base. They will never land in between city sites.

Go for the Cruise Missiles if ABM's Are Plentiful

If you have extra ABM's (or at least an ample supply), go for those cruise missiles rather than the normal IPBM's. The cruise missiles are worth extra points.

Smart Cruise Missiles

One approach to destroying smart cruise missiles is this: Plan your cursor and missile release such that the explosion's central point will occur precisely on top of the smart cruise missile. To be successful at this, you will discover that

you have to release your missile when the cursor is closer to the enemy missile than it would have to be for a plain IPBM. The explosion travels outward faster than the smart missile can react and run away. If the explosion point is not right on top of the smart missile, the smart missile can see it happening and change its course to avoid the explosion area.

Here's a second approach which does the job but is harder to execute and uses more ammunition: Plan your cursor movement and release such that one explosion occurs just below the smart cruise missile and a quick, subsequent explosion occurs just above the smart cruise missile.

If you surround it appropriately, then it will be trapped and will be unable to escape. This works, but leaves you with fewer missiles at the end of the wave and hence fewer points. However, it is effective at keeping you alive!

Shoot and Ignore

As in Space Invaders and other similar shooting games, once you fire your shot, sitting there and admiring it does you no good. You must learn to shoot, ignore that ABM's flight, and move on to the next cursor-target area. Your eye should, however, be seeing enough of the overall picture to notice if a certain explosion misses its intended target.

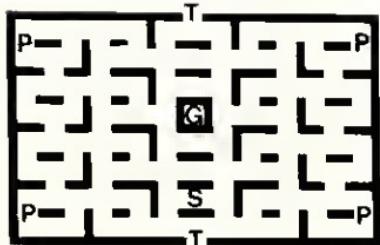
Pac-Man

Descriptive Information

THIS IS ATARI'S HOME VERSION of the phenomenally popular arcade game. In early 1982, many thousands of Pac-Fans tried to order their Pac-Man cartridges even before stores could hope to obtain their first shipments.

The general idea of the Atari Pac-Man is the same as that of the arcade game. You weave through a maze and try to consume all the "dots" (which Atari calls "video wafers") and to avoid the ghosts, which pursue you. As in the arcade game, there are four special "power pills" which can give you temporary power to consume ghosts during their vulnerable period.

The maze is considerably different in the Atari game. The layout is the same from screen to screen, and is shown above. **S** is where the Pac-Man starts each screen (and where he begins again after being caught by any of the ghosts). **G** is the ghost



chamber, where the ghosts go to be "reincarnated." **T** indicates the tunnel which connects top and bottom of the screen. **P** is a "power pill."

Scores are also different in the Atari game: much lower. This is due to a number of factors, which include the following: (1) Points for dots and ghost consumption are one tenth of their arcade counterparts; (2) there are 126 dots per screen now, compared with 240 at the arcade; and (3) ghosts' speed and behavior are different. In summary, most players think that it is easier to run up huge scores on the arcade machines than on the more difficult of the Atari Pac-Man variations.

One nice feature of the Atari game is that you get an

extra man for each board that you clear; this continues up to a maximum of nine men stockpiled at any one time. And, of course, you don't have to keep feeding coins to your Atari!

For the game variations that have a faster-moving Pac-Man, beginners and intermediates are likely to have some difficulties maneuvering the Pac-Man. In fact, there are many times when you try to make a turn and may keep missing it! It is harder to execute a pattern to perfection.

Another significant difference is that you cannot tell one ghost from the others as you can in the arcade counterpart. The ghosts do not have features or characteristics that make them easy to distinguish from each other.  is the ghost chamber, where the ghosts go to be "reincarnated."

Helpful Hints

THIS SECTION OFFERS A series of helpful hints and guidelines that can be applied to the series of game variations available on Atari Pac-Man. Proper application of the hints and guidelines will keep you alive longer at the

game and will help you outwit those treacherous little blinking monsters. The helpful-hint material is organized into a series of logical topics that include the ghosts, the vulnerable period, power pill consumption, and so on.

First, consider those ghosts:

They're Random

In the original Pac-Man game, the behavior of the ghosts was predictable; by this we mean that every time you executed a particular pattern on a particular machine, the ghosts would react the same way to that pattern; if you have a pattern that works today, then it will work if you execute it tomorrow also. The arcade Pac-Man patterns are "repeatable."

In Atari's Pac-Man, the ghosts are not so predictable and the patterns are not necessarily repeatable. This is because the ghosts now exhibit some signs of random behavior. You may have one pattern that works like a charm one time, but when you execute that same pattern on the same screen of the same game it may not work next time! This can be extremely frustrating to those who like

to develop and perfect patterns, a pastime which was successful at the arcade Pac-Man machines.

The important concept here is to accept the fact that the ghosts may not be totally predictable and patterns may not be totally repeatable. Plan your games and moves accordingly. Always be flexible; do not remain too firmly attached to a predetermined pattern.

They Blink

The Atari graphic display has ghosts that are constantly blinking. If one does appear solid, it means that there are two or more on top of each other; they will soon split up. These light-colored blinking ghosts take some getting used to. Sometimes they are hard on the eyes; other times they are hard to see if your eyes and mind are not looking for them or concentrating on them. One trick that we find helpful is to turn the TV's brightness down considerably. This makes the ghosts show up better. Try it.

They Don't Make U Turns

One characteristic of the ghosts that we have found somewhat predictable and

repeatable is this: They don't make U turns. If headed in a particular direction, they never turn completely around and head back toward their original position. There does, however, appear to be one exception to this: Once in a great while, for some strange reason, they may make a U turn in the tunnel. Sometimes they even become temporarily trapped in the tunnel; but it doesn't last long, so don't get your hopes up.

They Don't Like the Tunnel

In the arcade Pac-Man, if you go through the tunnel the ghosts like to follow you through it. The Atari Pac-Man ghosts seem to be somewhat shy when it comes to using the tunnel. They don't like to go in there on their own, and they don't seem to like to follow you into it. Keep this in mind when they are starting to close in on you. But a ghost will occasionally follow you in, so be ready!

When They Leave the Ghost Chamber

The ghosts always leave the ghost chamber by a door at its right side. Stay plenty clear of that area when you suspect

that the ghosts' vulnerable period may soon be ending. You can tell when they are just about to exit: The eyes of the ghosts in the chamber turn a different color immediately preceding the exit!

They Swarm

A single ghost will not always corner you if given a relatively good chance to do so. However, the really dangerous situation seems to be when the pack of ghosts is approaching your general area. Once they begin to get close and get your scent, they seem to swarm. They work well as a team to corner you, especially against those side walls. Learn to sense when a swarm is about to begin and immediately leave the area without any delays or detours. In general, don't linger too long in any one area; this reduces the chances of a swarm.

The Computer Favors the Ghosts

Many times you will swear that a ghost didn't even touch you, yet the Atari computer calculates you as a fatality. Compared with the arcade game, it seems that now there are more cases when there was barely a perceptible contact

made between ghost and Pac-Man, and yet the Pac-Man collapses and you lose a life. This is frustrating at first. But then you must learn. Give those monsters just a little extra room—a bit more than you think you need. That little extra space will be a lifesaver.

First Ones Out Are Faster

Here is an observed fact: The first two monsters out of the pen seem to be a bit faster than the last two. Give them more extra room.

About the Vulnerable Period...

The vulnerable period is that brief period in which you can consume the ghosts and rack up extra points. It occurs as a result of your consuming one of the four "power pills," just as in the arcade Pac-Man game.

Its Length Doesn't Vary

Unlike the arcade Pac-Man game, the Atari Pac-Man game has fixed-length vulnerable periods. Regardless of which screen you are on or which game variation you are playing, the length is always the same: seven seconds for B difficulty and four seconds for A difficulty.

You Can Kill Two Birds with One Stone

When pursuing ghosts during the vulnerable period, try to go down paths containing dots. This way you accomplish two things: You are catching and pursuing the ghosts, and you are clearing the board. Those extra few dots could just mean the difference between safely finishing off the entire screen and getting caught toward the end when you have no power pills for safety.

You Get a Clue

When pursuing ghosts, you have to be careful toward the very end of the vulnerable period. If you are catching up to one just as he's about to become dangerous again, you think you're going to rack up extra points—but as you overtake him the vulnerable period ends and you are the victim. If you are observant you can prevent this unexpected tragedy from occurring, since the ghosts give you a clue when the vulnerable period is just about to end: They turn a slightly different color about 1.5 seconds before the period ends—and the musical notes stop. Take the hint!

A Curious Happening

Let's assume that you have eaten a power pill and have subsequently consumed all four ghosts. Their eyes have gone back to the ghost chamber. If you eat another pill while their eyes are still in there, then the ghosts stay in the chamber for the remainder of that subsequent vulnerable period. In a sense, you have wasted a power pill. So if you want another shot at those darn ghosts during that second vulnerable period, don't consume a power pill too soon after consumption of a previous one!

Ghosts Circle and Return

During the vulnerable period, the ghosts very often exhibit certain patterns around the board configuration shown below:



In all cases, the solid line indicates the first part of the ghosts' flight away from you during the vulnerable period. In a large percentage of these situations, they will continue the movement as shown by the dotted lines. In other words, they will circle around that small block and will return via the path from which they came. Thus, when you see them begin such a move you can save time and get them on the way back rather than chase them up and around. This allows you to consume more ghosts during the vulnerable period and noticeably increase your score. Check it out!

They'll Use Any Intersection They Can

As the ghosts flee from you during the vulnerable period, they will use any intersection they can. They like to turn lots of corners if they think you are after them. They twist and weave. They won't often continue down long straightaways away from you, and they certainly won't go down long straightaways toward you. Expect them to turn when you are on the offense.

Go for Those Ghosts!

In the arcade game of Pac-Man you only get a maximum of three or four lives. In Atari's Pac-Man you get an extra life for each board you clear, up to a maximum of nine lives. These possibilities for so many extra lives make it worth the extra risk to go for all those ghosts during the vulnerable period. Take some chances, because—unless you are down to your last life already—you can always make up for any fatal accident.

Eating Power Pills...

This section offers a few useful tips related to eating power pills.

Don't Save Them Until The End

In the arcade Pac-Man game where the monsters behave a bit less randomly, you can use patterns and strategies that save consumption of the four power pills until the last part of the board. In Atari Pac-Man it seems to be a much better strategy to not wait until toward the end of the board to use the power pills. Get in the habit of consuming the power pills in the middle (or even near the start) of the

chase on a given screen. In fact, whenever the ghosts start to swarm it makes good sense to use those power pills as much as possible. The other extreme (using up all the power pills too early in the board) is also to be avoided, since you may need one to save your life in a tight situation.

Don't Wait Until Ghosts Are on Top of You

As you hover near a power pill, it is good strategy to wait (delay) a bit if possible until the ghosts get close to you, thus making your subsequent pursuit of them a bit easier. However, you can get burned if you delay too long. You must completely cover the power pill in order to make the ghosts vulnerable. If you are just partially covering the power pill and a ghost gets too close to your immediate vicinity, you lose! Thus remember: Waiting for the ghosts to get "pretty close" is a good move, but waiting for them to get too close can be deadly.

Game Variations

AS THE ATARI INSTRUCTION booklet indicates, there are

eight Pac-Man game variations. The speed of the Pac-Man and the speed of the monsters are the variables that make up the different combinations.

The Children's Games

In most Atari games, the children's versions of the game are simple to begin with and remain simple throughout. In Pac-Man this is not true. The children's versions (games 3 and 7) start off simple, but in the later stages the speed of the ghosts increases significantly. The later parts of the children's game (i.e., after several boards) are about as difficult as the later parts of some of the more difficult games.

The Most Difficult

The Atari instruction booklet indicates that game 6 should be the most difficult, based on the speeds of the Pac-Man and the ghosts. But our experience has shown that game 1 (which is described as having a slow-moving Pac-Man and ghosts at jogging speed) is as difficult as any. Don't be surprised if game 1 turns out to be tougher than you originally expected.

A Pattern to Get You Started

One pattern concept that seems to work at times on board 1 of game 1 is the following: As you begin the game, go to the left, then down to the bottom of the board where you immediately head to the right. From now on you keep circling as close to the perimeter of the board as possible, but with one exception: Avoid going into the corners—it is too early in the game for you to consume any power pills. When you have finished clearing those outside dots you can move in toward the center and continue circling around. This helps clear some of the more difficult areas, and it also avoids lingering too long in any one general area.

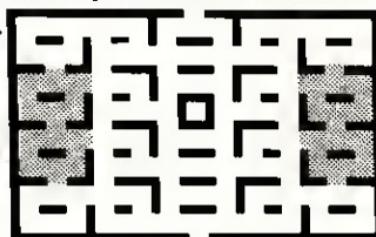
Moves, Subpatterns, and Strategies

THIS SECTION DISCUSSES A series of general helpful concepts, moves, strategies, and pattern portions. These provide guidance in general; they are not geared to any particular game variation or any

particular board. Complete, guaranteed patterns for solving entire Pac-Man games are not generally applicable, especially in light of the fact that the ghosts' moves are random at times. We have to be content with more general hints and guidelines at this point.

The Sides Are Dangerous

The two middle areas along the left and right side edges of the screen are the most dangerous areas (see the sketch below). In these areas it is easier for the ghosts to trap you. This is especially true if they start to swarm and close in on you in that general area.



Most of the time, it is good strategy not to linger too long in any one area. This is especially true in the danger zones indicated. Hasten and leave the area if you sense that a swarm is about to begin with that area as its target.

No Safe Spot

In the arcade version of Pac-

Man, there was one safe spot where the ghosts couldn't harm you (assuming you entered it properly). Experience has shown that there is no such safe spot in the Atari Pac-Man; you must always keep moving. Forget the concept of a resting spot.

Reverse the Flow

Once the ghosts start to swarm as a pack, it takes them a while to recover from the swarm and to attend to another area of the board. Thus when you have avoided a swarm that is now in progress at one area of the board, go to the opposite area. You will usually have time not only to catch your breath, but also to clear many dots before they start to close in on you there.

Get the Tricky Parts After You

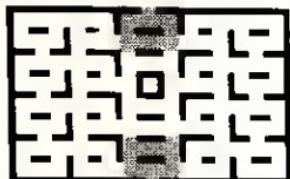
Eat Power Pills

As indicated above, the middle parts of the left and right side edges are the most difficult parts of the entire board. If you are having trouble clearing these areas, or seem to get trapped there a lot, try this: Clear the dots in those two areas immediately following consumption of a

power pill. You may not get to eat all four monsters during the vulnerable period, and thus you will not maximize your point total if you follow this guideline. However, you certainly will tend to stay alive at the game much longer.

The Easy Parts

The central parts of the top and bottom edges seem to be the easiest. These portions are indicated in the sketch below:



Concentrate on these parts only when it is convenient and if you have nothing else to do. They can be done with relative ease at almost any time, especially via the tunnel. They will often be cleared incidentally as you are following some more important concept or strategy. Don't worry about these!

Dots Do Not Slow You Down

Consuming dots does not slow you down as it does in the arcade Pac-Man. Thus as you are fleeing from a ghost, you might as well run down a path having dots as a path without

dots. Don't just run; run and clear those dots.

Corners Do Not Help You Gain

Unlike the arcade Pac-Man, rounding corners does not let you increase your lead relative to a ghost in pursuit. Forget the zigzag as a device solely to increase your lead.

(at the start of a board), do a quick U turn around the nearest block, and head toward the right side of the board to do some serious dot-clearing. This is shown below; the dotted line is the beginning move of the ghost pack, while the solid line represents your moves.

Arcade Head-Fakes Belong in Arcades

In the arcade Pac-Man, a "head-fake" can be used to lure a ghost toward you and to be sure he follows you (e.g., into a tunnel). A similar move in Atari Pac-Man does not usually accomplish this. If a ghost made up its mind not to follow you, it will not be convinced otherwise.

Start Left, Go Right

This is a little tip for any time when the speeds of the ghosts are quite high (e.g., toward later boards in a given game). The ghosts always emerge from the ghost chamber at the right side. They then seem to look below and, if they don't see you to right of center below, go toward the left side of the board. You will therefore gain a little lead time if you start initially to the left

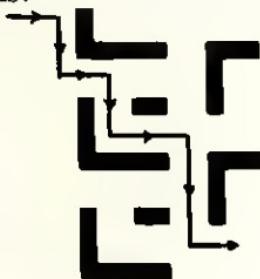


Staircase and Clear, Staircase and Clear

Here's a general idea that brings success in a lot of situations. You cannot apply it blindly and forever, due to the random element of the ghosts' motion. It will often prove helpful, but you have to be ever ready to abort the mission if the ghosts force such action. Use the staircase pattern to get to one side of the board; clear several dots there; staircase to the other side of the board; clear several dots there; staircase back to the first side; clear a few dots

there; and so on. Repeat this pattern as often as possible. When things get too close for comfort, go for the power pills and then perhaps repeat the original idea.

The staircase pattern looks like this:



Don't Worry About the Bonus Symbol

A special bonus symbol (called a "vitamin") appears once in a while at the position indicated by **V** in Figure 16, the Pac-Man Game Board. If you consume it during its brief appearance, you get some extra points. We feel that the relative value of the bonus symbol—compared with points for ghosts and so on—does not justify taking much of a risk to try to get to it. We recommend not going much out of your way to try for it and never taking any risk (e.g., going too near a ghost) in order to have a chance to run over the bonus symbol. (The vitamin stays on the board for thirteen seconds on

difficulty B and for nine seconds on difficulty A.)

Temporary Relief in the Tunnel

As stated above, the monsters don't get very excited about the idea of going into the tunnel. If you do enter the tunnel and nobody follows you in, you might want to try this: When you are in what you think is the middle of the tunnel, repeatedly move the joystick up and down, up and down, etc. You are moving back and forth and staying out of sight; you appear nowhere on the TV screen. This will allow temporary relief from the monsters. However, do not rely on it for any great period of time... and beware of being trapped in the tunnel (by a ghost at each end).

Up You Miss, Down You Get It

Consider any area of the board similar to that shown below (there are three of these on each side of the vertical center line).



One odd characteristic of clearing the dots in such an area is this: When you go up through the area as shown, you *miss* consuming the dot labeled **D**; when you go down along the exact same path, you *do* consume that dot. It doesn't seem fair, but that's the way it works. Thus if you can develop your patterns appropriately, try to go down through these pathways, not up through them.

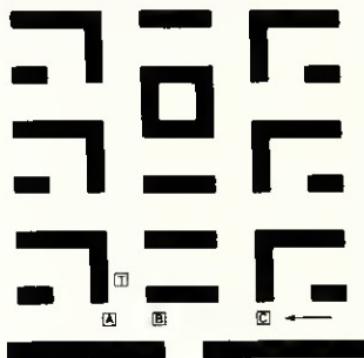
even earlier in game variations where the Pac-Man goes at higher speeds. In the figure below, the Pac-Man is moving right to left and would like to take the turn upward into the target path, **T**. Moving the joystick up at point **C** would be too early and would result in a turn into the incorrect path. Moving the joystick up at point **A** would probably be too late, missing the turn. The correct position to move the joystick is at the point **B**.

Restart

Assume that you do have a pattern, or even part of one that works for a particular board on a particular game. If you do get eaten on that board before consuming any power pills, you may use that same pattern over and it will work as it did before. Of course, you would want to deviate on the part where you got caught the first time around.

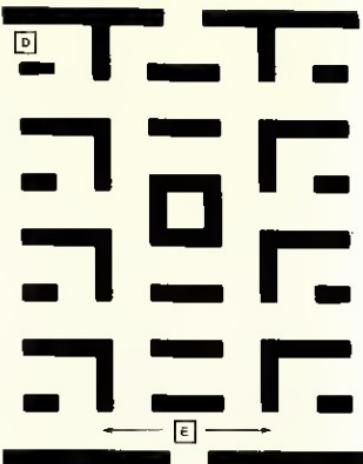
Anticipate the Turns

Generally it is best to anticipate turns. This means you should move the joystick in the direction of the next turn a little bit before you actually get to the intersection. This is necessary to prevent missing the turn, and must be done

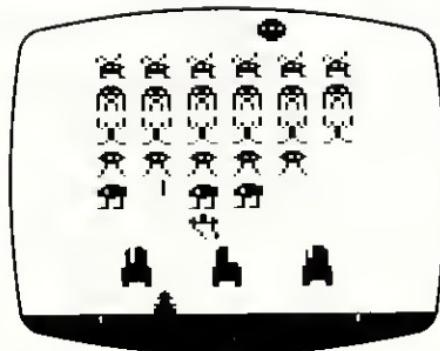


One note of caution, however. There are a few points on the board that deserve special mention. See the diagram below. At points along the upper edge similar to **D**, moving the joystick up when there is no path possible in an upward direction may result in the Pac-Man's coming to a dead stop. Never turn if there is no path possible to turn to in that direction—a ghost may

be tailgating and the result will be a rear-end collision. Also note the area [E] along the bottom edge near the tunnel entrance. If you are moving left to right or right to left there and push the joystick down too early, then the Pac-Man likewise may come to a dead stop. Don't turn too early on that one stretch.



Space Invaders



Descriptive Information

THIS IS CERTAINLY ONE OF the most popular of all Atari's home video games. It is also one of the most successful adaptations of an arcade game.

The Space Invaders game board is shown above. The array of space invaders initially consists of 36 aliens arranged in a square containing 6 rows and 6 columns (we use the term "row" to refer to the horizontal strips of invaders, and the term "column" for the vertical strips of invaders). As each screen progresses, the invaders march in formation across the screen as far as they can go, then descend to the next lower level and march

back in the opposite direction.

The game objective, stated in general terms, is to get as high a score as possible by eliminating the invaders before they land at your level, wiping you out. At the same time you must avoid being hit by their "laser bombs." The game ends with their third hit. You score points for wiping out invaders, and you get additional points (200 in most games) for destroying the "command ship" which occasionally glides across the highest level of the screen. Each invader in row 1 is worth 3 points; in row 2, 10 points; 3, 15 points; 4, 20; 5, 25; and 6 (the top row), 30.

Since the game cartridge features a mind-boggling 112

game variations, we will limit our discussion to general tactics that work for most of the game variations, and specific strategies for seven of the most popular games.

Helpful Hints and Information

THROUGHOUT THIS MATERIAL, we use "you" to refer to the laser cannon that you fire with your red controller button.

You Are More Limited

You can move only along the bottom level. You are also more limited than the invaders in your side-to-side movement: You cannot go quite as far toward either edge of the screen as the aliens can (there are small rectangles at the bottom of the screen that indicate your limits).

Invaders' Formation

The invaders at first march slowly across the screen. Each time they bump up against their invisible right or left boundary, the entire formation drops to the next-lower level and reverses horizontal direction. Any invader in the

lowest row, if left unharmed, would reach the earth on his sixth crossing; any invader in the highest initial row would reach the earth on his thirteenth crossing.

Double Fire

Here's one variation of the game which Atari forgot (?) to document in the instruction booklet that comes with the game. Normally, in any of the 112 game variations, you cannot fire a second laser shot until the previous shot has either reached a target or left the screen. However, with a little slight of hand, you can alter the rules so that you can fire two shots at a time (i.e., fire the second one while the first is still in flight.) Here's what you do: Depress the "reset" switch and hold it down while you flip the "power on" switch to energize the console. Presto! You now have "double fire." This certainly will make the game noticeably easier, if that's your whim at the moment.

The Shields

The shields protect you from enemy fire, but they get chipped away bit by bit each time a bomb hits them. Always make

sure that the one you're taking refuge under is solid enough to withstand the invaders' bombs. When a shield's wall has worn thin, don't depend on it to save you; be ready to move in order to help yourself too. The shields can also be a hindrance, so always keep in mind that you must shoot around them. (Your bombs can destroy shields, too.) And remember that your shields disappear when the lowest invader reaches their level; thus as the invaders approach your shields, anticipate the possibility of losing your protection soon.

Nail Them a Column at a Time

Since the invaders march across the screen until they bump up against their invisible "limits," we recommend wiping them out by working on one column at a time. If you eliminate an entire column, you are adding a delay to each of their crossings for their entire descent to earth. The total extra time which you are "buying" for yourself is the total of the delays for each of the invaders' remaining crossings. Thus, all other things being equal, focus your attack

on eliminating one outside column at a time. Always keep trying to shrink the width of the remaining array.

Keep the Invaders in Rectangles

For the best success at the game in general, try to wipe out invaders in such a way that the remaining ones assume a rectangular shape. Eliminating a column at a time, of course, ensures such a formation among the survivors. From time to time you have to destroy the center ones in the lower rows too, but this is best done when they get low enough to be real threats.

Two Groups Are Bad News

If the remaining invaders form two separate groups, the formation really works against you. For one thing, their formation is wide enough so that they cross rapidly, thus hastening their descent to earth. For another thing, it is considerably more difficult for you to destroy them if you have to deal with separate groups. A formation such as the one shown below



is definitely to be avoided!

Watch Their Bombs, Not Yours

There is a tendency (at times almost irresistible) to watch your bombs in flight. Sometimes you want to anticipate the hit, sometimes you just enjoy the flight of the bomb as it leads to the destruction of an enemy. But watching your bombs is not a very productive use of your vision. It is much more beneficial to watch the invaders' bombs or the invaders themselves, to anticipate their next position. Thus our motto is "Watch their bombs, not yours." Your most pressing objective is to dodge their bombs—provided the aliens are not yet at so low a level that they threaten to crush you.

When They're Low, Watch the Corners

When the invaders are low, you don't have as much time to react to their bombs. You can get wiped out much more easily then, so look out! Experience has shown that the corners are especially dangerous when invaders are low.

After You Destroy 15, They Speed Up

After you have wasted the fif-

teenth invader on a particular screen, the invaders remaining on the screen speed up.

When 7 Are Left, They Speed Up Again

There is another speed increase when you make the transition from eight invaders left to seven invaders left. Thus when you have worked your way down to eight survivors, you may have a brief instant to study the situation and carefully plan for the remainder of the screen. When you nail the very next invader, watch out for that speed increase. Later in this chapter, a method is presented which goes for maximum point total. It makes use of this special situation of eight invaders remaining.

Lead the Enemy, Don't Follow

As the invaders move across and drop their bombs, their bombs tend to drop slightly behind the group. Thus if you are trying to nail one of the two end columns, work on the right end as they move to the right and work on the left column as they move to the left. This way you will tend to avoid more of their bombs and increase your chance for

survival. You should always try to *lead* the enemy!

Command Ships Are Worth It

The command ships which occasionally cross at the top of the screen are worth 200 points. By comparison, eliminating an entire screen full of invaders nets you only 630 points; thus three command ships are worth about as much as an entire array of invaders. It is almost always worth spending at least some effort to try to destroy a command ship (unless the invaders are about to reach earth, in which case you have to turn your attention to them). Don't hesitate to deviate from your game plan slightly in order to try for those valuable command ships!

Two-Bomb Limit

Each column of invaders can have at most two bombs in flight (on the screen) at any instant in time. This is true regardless of the number of invaders in that column. This gives further reason to abide by the earlier guideline which tries to eliminate invaders a column at a time. The fewer columns on a board, the fewer bombs there will be in flight

toward you!

Flee the Last Invader

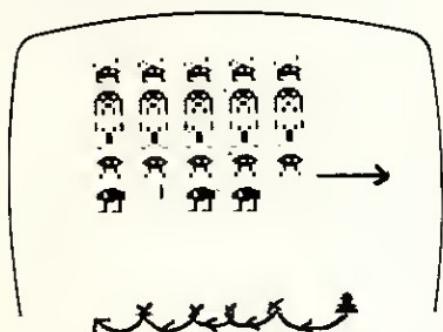
The instant your bomb hits the last invader, there is sometimes a tendency to ease up as the secure feeling of enemy annihilation begins to warm your insides. But be careful! Any bomb which the last invader had just released continues to fall to earth, even though the invader himself was destroyed. Thus as you waste the last invader, continue to move away from him for a second or so. This keeps you safe from the threat of any last bomb. Always "shoot the last, and move." And if you follow the other guideline above, which recommends leading, not following, you should be very safe.

When Crossing, Watch Only Their Bombs

Crossing against the grain, as shown in the figure below, is quite dangerous. Beginners have extra trouble with this maneuver, since it can easily cost you one of your lives. The best advice we can give to those having trouble with this move is: Forget firing bombs yourself as you cross. Concentrate only on the enemy

bombs and your keeping out of their way. You can usually find time later to wipe out those lower invaders.

Also, when crossing against the grain do not go all the way across in one continuous movement. Take your time and use as many separate "step jumps" as you need. After each step jump, you should land at a safe spot between two columns of invaders. Once at a safe spot, you may choose to glide a short way with the invaders (staying between those same two columns) and then jump to the next safe spot. Crossing via three such step jumps is illustrated below:



For crossing with the grain, the method above also works. It should be emphasized, however, that crossing with the grain is *much more* dangerous and is not recommended when there are invaders at level 3 or lower.

Specific Strategies and Solutions

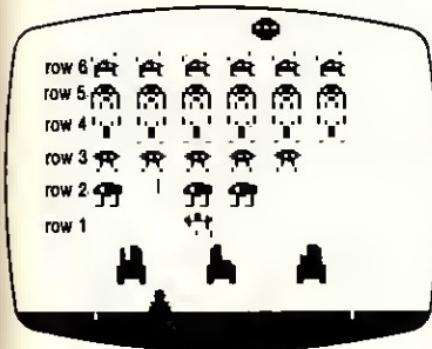
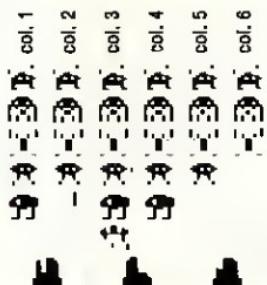
THE PREVIOUS SECTION LISTED many general helpful guidelines and related information. This section turns its attention to specific game variations or specific game objectives, and tells you details necessary to achieve success at them. Where possible, precise steps and procedures are specified.

Game 1: A Solution

Game 1 is the fundamental Space Invaders game, and is probably the single most-played Atari game. It does not have any of the really tricky features such as moving shields, zigzagging bombs, fast bombs, and invisible invaders, yet it offers a pretty good challenge for both beginning and intermediate players. This is a one-player game; a method for success is next presented. The ideas presented in this solution can also be applied in games 1, 17, 33, 49, 65, 81, and 97 and in many of the more complicated versions.

To simplify the instructions which follow, keep in mind that we number the rows and

columns of invaders as shown below:



Play begins with you at the left side. Immediately cross to the right end, taking one or two shots on the way, but do not take a shot around column 5.

Concentrate on column 6; wipe it out entirely before it gets near enough the right edge to start back across.

If you have enough time before getting yourself cornered near the right edge, start to chip away at column 5. In either case, when things get

too close for comfort at that right corner, fly across toward the left edge. Take a couple of shots as you go across, but only if you can first be sure to avoid any of the invaders' bombs. Don't take a shot in the home stretch approaching column 1, your next target. You want to have shots ready for immediate delivery to column 1, and if you let one go just before column 1 and it misses, you will have to wait until it leaves the screen before you can fire again. This will throw the timing off for the plan.

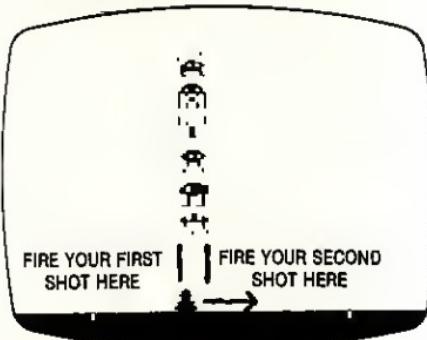
Concentrate next on eliminating the entire column number 1. After this the invader array is at most four columns wide, and the time it takes to cross is noticeably longer than it was initially. This buys you extra time to complete the remainder of the plan in a fairly secure fashion.

Continue with the above strategy: As the invaders are going left, work on destroying the leftmost column or columns. When they are starting to get you cornered, cross carefully to the other side. Then as the invaders come back to the right, work on eliminating the rightmost col-

umn or columns. This is executed repeatedly, the only deviations being that occasionally during crossing you have to clear invaders in the lowest row (to prevent any single one from getting too close to earth), and should avoid crossing when they get too low.

This scheme works well for boards 1, 2, and 3. On boards 4 and 5 you have to use a different plan, since the invaders' initial position is quite low. From your starting position, cross smoothly to the right as you eliminate the bottom two invaders in columns 2 through 6. Success for the complete board here requires that this opening move be completed in the least possible time. To do so, use the following guidelines: Fire the first shot at the column when your cannon is just under the left edge of the column. Fire your second shot at that column when your cannon is practically at the right edge of the column. This guarantees that you can keep moving and still wipe out two invaders in each column. (You should be able to keep the joystick pressed to the right as you perform this.) This important move is illustrated in

the figure below:



You may require extra practice to perfect this, but we promise you it is worth the trouble.

As the second step in the board 4 and 5 strategy, streak back to the left and work on complete elimination of column 1.

After that, return to the same finishing procedure as for the first few boards—get on the left when they're moving left, and get on their right when they're moving right, always working on a column at a time.

Go For It

The above solution focused on what you had to do to clear the board and survive to see another board. As you get better at that, you may desire something more than just clearing the boards. If you want to take some extra risks for big bonus points, read this

section! Here are the big-point procedures:

- For starters, destroy fourteen invaders. If you're good enough, you could follow the plans of the last section and clear columns 5 and 6 before the invaders know what's happening. That takes care of twelve of them. Nail two more (e.g., the bottom one in column 2 and the bottom one in column 4) as you breeze across the left edge of the board. This leaves the following array of invaders (X = a live invader; O = a dead invader):

X	X	X	X	O	O
X	X	X	X	O	O
X	X	X	X	O	O
X	X	X	X	O	O
X	X	X	X	O	O
X	O	X	O	O	O

An alternate arrangement of survivors some people like is this one:

X	X	X	X	X	O
X	X	X	X	X	O
X	X	X	X	X	O
X	X	X	X	X	O
O	X	O	X	O	O
O	O	O	O	O	O

- Now resist the temptation to nail any more invaders

for a while. Just stay on the end of the board away from the survivors, and wait for command ships to float across the top level. One good hiding place which players often don't think of is between the columns of invaders. If you position yourself correctly and move along with them, you'll be safe. Each of these command ships is worth 200 points, so your point total can really climb rapidly. You should be able to patiently wait and nail six command ships before you have to scamper over to tend to low invaders. Try it; it's quite surprising that you can actually get that many command ships and still survive.

- When the aliens are just about in "death row," cross and nail the lowest two in each column. Use the "continuous travel" method mentioned in the section above on the game 1 solution. Then wait for command ships when possible, nailing the bottom rows only at the last possible safe moment. This works well for boards 1 through 3. If you can get up around 2,000 points on the first board, you are do-

ing very well!

- On boards 4 and higher, this plan breaks down, since you have your work cut out for you just to stay alive. But you should still be able to nail a couple of command ships. As they appear, take a second to try to get in position for a clear shot at one. Try to send a bomb up between invader columns to nail the command ship. With a correctly timed release this works nicely, and you don't have to waste time chasing the command ship!

- For all boards, you should remember that when there are seven or fewer invaders remaining, the survivors speed up noticeably. Thus at any board when you get down to eight invaders remaining, hesitate for a while and look for command ships.

Game 9—Invisible Invaders

One of the really difficult and challenging games is game 9: Invisible Invaders. The only time the invaders are visible is for a brief instant immediately following the destruction of any invader or a command ship.

The same strategies and solution patterns for game 1 would work, except for one problem: It is extremely difficult (if not impossible) to execute them when you cannot see what you're firing at! For boards 1 through 3, it's probably best to start off by gliding to the right. During the glide, however, you will probably have to fire once or twice to see enough to align yourself for the attempted destruction of column 6 at the right end.

For boards 4 and 5—if you can get to them—use the same patterns given for game 1. In a sense it is easier to hit the aliens on these higher boards, where they start off closer to you. Unfortunately, it is also much easier for them to hit you!

General Guidelines

- Continually observe the dropping bombs. If you carefully retain the image of the points where the bombs drop from, you can almost visualize the columns of invaders in motion.

- Try hard to identify the points when the invaders bump up against the edge

and return toward the other edge. These points are difficult to recognize, but are important keys to staying with the array visually.

- Some people find that staying with the end column can help them find their targets better (i.e., forget the scanning across the entire array).

- If you make enough shots on target, you can actually force the invaders to be visible most of the time. However, it seems that a combination of experience and luck contributes heavily to the success of this.

- If you want to go for immediate point-total maximizing, you may try focusing on destruction of the command ships (since clearing a board may be difficult for beginners).

Game 2—Moving Shields

In game 2, the shields are in constant back-and-forth motion for the entire period when they are on the screen. Game 1 solution patterns are virtually useless here, since the shields are directly above you so much of the time, stopping

your bombs. Although they do protect you from the enemy bombs from time to time, their constant movement makes them more of a hindrance than a help.

Here are a few ideas you may want to experiment with:

- Since both your bombs and the invaders' bombs chip away at and will eventually destroy the shields, one strategy is to continually shoot at the shields at the start of each board. You usually have ample time to eliminate at least one shield before the invaders get too low. With an end shield gone you can then concentrate on wiping out the end columns without being distracted by those annoying shields.

- Another fairly successful strategy is to leave one column at its original six-invader length, keeping busy eliminating the lowest invaders or two in the other columns. When that lowest invader in the column reaches the level of the shields, the shields automatically disappear. Then quickly tend to the complete elimination of that

long column. After that, you can go back to what is left of the other five columns. From that point onward, you are playing just as in game 1, so you can apply any game 1 ideas and guidelines to what's left of the invader array.

- While the moving shields are on the board, things usually work out best if you move around a lot. (Some players find success by even moving in synch with the shields, staying between them and imitating their back-and-forth motion. This technique has some limitations: (1) You have to deviate many times to duck invader bombs, and (2) you may be restricted from access to certain parts of the invader array which you feel you should be tending to.)

- One guideline which applies to just about every moving-shield strategy is this: Don't fire at any one column for a very long continuous time. You have to keep shifting over to different columns, then coming back again later.

Game 3—Zigzagging Bombs

In game 3, the invaders' bombs are a lot more difficult

to avoid. They zigzag on their way toward you, and in addition the zigs and zags are intelligent. They zig and zag with you in mind; they even change their original intended flight pattern in order to go hit you!

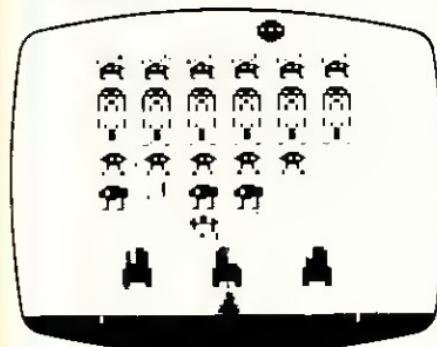
In this game it is especially dangerous to chase those invaders from behind. You really have to abide by the game 1 suggestion of hitting the left columns when invaders are going left and hitting the rightmost columns when the invader array is moving to the right.

Nail the lowest invaders first in this game. Their bombs are a lot more difficult to dodge than bombs from higher invaders, whose zigzags you have more time to see and react to.

Again, don't stay in one place too long. Corners are made extra dangerous. The intelligent zigzags can easily trap you in one.

Here's a technique you may enjoy using: Initially shoot a bomb or two precisely down the middle of a shield. With such a fine tunnel down the middle of the shield, you can safely use the shield (at least for a while). The low and mid-

range invaders especially have a lot of trouble getting at you in this arrangement. Carving the tunnel through the exact center of the shield is crucial. If you are just a bit off center, they can hit you more easily and erode the shield more easily. In any event, stay on guard and be ready to make a quick evasive move if necessary.



Game 5—Fast Bombs

In game 5, the bombs of the invaders are noticeably faster than they are in game 1. Your bombs, however, are at their normal speed, making you the undisputed underdog.

In the fast-bomb game:

- DO make extensive use of the shields while they last.
- DO NOT chase the pack of invaders from behind—wait for them to come back toward you.

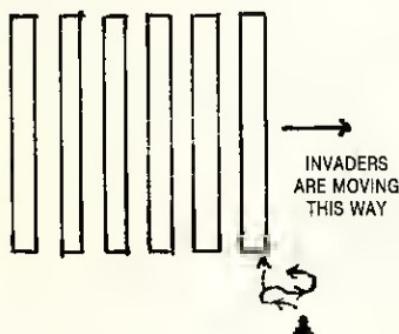
- DO NOT cross the entire invader array in an attempt to get to the other side of the screen (except perhaps at the very beginning of screens 1,2, and 3).

Here is the general plan of attack we suggest for the fast-bomb game of space invaders:

At the start, be super careful and streak across to the right side of the screen. Then proceed to nail column 6. Destroy as many more as you can from your position near the right corner (you may have to jump back and forth a bit near the corner). After that, follow the array of invaders, but do not try to nail them from behind and do not get too close. Just stay near and get ready for when they turn around and start coming back at you.

Once they have turned back and are headed your way, work on the leading column (the rightmost column in this case), but in this special way: Always stay a bit ahead of the pack. Sneak back quickly under the column, fire a shot, and quickly go back to where you came from. Then sneak back under the column again, fire a second shot, and quickly retreat without waiting

around to admire your shot. This small "pattern" is repeated as often as necessary, and is indicated in the diagram below:



Game 4—Zigzag Bombs and Moving Shields

Game 4 is really for advanced players. It features both zigzagging bombs and moving shields, thus reducing both your chances for high scores and your chances for staying alive.

In this case, we suggest that you apply the strategy above for the moving-shields game. The movement of the shields makes it virtually impossible to apply the techniques of shooting a tunnel through the shield center and staying behind it.

So the only helpful guideline here is to let one column remain untouched. When the lowest invader in that column

reaches their level, the shields disappear. After that you only have the zigzag bombs with which to contend.

Game 33—The Basic Two-Player Game

Game 33 is the fundamental two-player game. In it, each player is responsible for either the left or right half of the screen. The player on the left should clear columns 1 through 3, while the player on the right clears column 4 through 6.

On boards 5 and higher, have the left player wipe out the bottom two invaders in each column while the player on the right lays low and just stays out of the way.

Practice Makes Perfect

AS IN MOST GAMES AND sports, plain old-fashioned practice is very beneficial to most players. This is also true for Space Invaders, but how exactly can you go about practicing as opposed to actually playing the game? Here are a couple of ideas for you to consider.

Practice Avoiding Bombs

It is hard to practice avoiding

bombs during the game because if you make a mistake you are destroyed and you lose the flow. Look at the pregame show. The invaders move and fire bombs at you and you are free to move about at the bottom. This is a perfect condition under which to practice. The bombs fall just as in the real game, so go to it. Use this pregame show to practice your reflex reactions and special moves in dodging bombs.

Practice Picking Off Invaders

The pregame show is also a great means to sharpen your invader-popping skills. Practice staying with them, just on their leading edge as they move toward you. Then practice scanning across, shooting at enemy rows as you go. (Pressing the fire button during pregame practice does not actually fire a bomb; this ex-

ercise just sharpens your reflexes for the real thing.)

Practice Hitting Command Ships

These unfortunately do not appear on the pregame show, so any practice on these must be done under game conditions. One prerequisite for mastery is that you must know the precise lead distance to fire your bomb ahead of the command ship. Experience and practice will show that you must shoot about $1\frac{1}{2}$ to $1\frac{3}{4}$ invader width in front of the command ship. Practice visualizing this distance between you and the command ship. Get that distance burned into your memory so you use it without thinking. As a sneaky means of getting used to that distance, you might try a piece of tape of that length positioned across the top of your TV screen.

Super Breakout

Descriptive Information

IN THE ORIGINAL ATARI Breakout, the screen display consisted of six layers of bricks (which we call "walls"), a ball, and a paddle that you moved left and right to hit the ball back toward the bricks. You were given five balls, which you could release one at a time. If a ball slipped below your paddle, you lost it. If you hit a brick with the ball, the brick was eliminated and you collected points appropriately. After you cleared the screen of the six walls of bricks, one more such screen appeared; after that the game was over. Scores could not get astronomical, and the game was relatively simple.

In order to make improvements on the original concept, Atari came up with a new game called Super Breakout. The general idea is the same; you try to

- Prevent the balls from slipping by (below) you and
- Eliminate bricks, thereby

accumulating points. Some of the differences are that in Super Breakout:

- The paddle is smaller
- The ball's movement is slower at the start
- There are more bricks
- You cannot play a four-player game
- The point values of bricks vary for different walls, enabling different strategies
- The screen is now taller than it is wide (in the original Breakout, the screen was wider than it was tall)
- You are not limited to two screens per game

Once you play some games of Super Breakout, you may not want to go back to the original. There are also more interesting game variations.

Atari has also added interest to the new Super Breakout game by creating a cosmic story line to stimulate your imagination: You are supposed to picture yourself as a one-person space shuttle being faced by various "force field" walls that threaten you.

However, the general idea of the new game is indeed the same as Breakout.

The screen display for game 1 of Super Breakout is shown in Figure 17. The game begins with eight walls of bricks on the screen. Numbers at the top of the screen record your point total and the number of the ball you are on. The paddle is the horizontal strip shown at the bottom of the figure. Rows are numbered as shown for reference purposes.

Scoring is fundamentally determined as follows: Bricks in the higher (and higher-numbered) rows are worth more. The table below summarizes this:

Rows	Row Position	Points per Brick
7, 8	Highest	7
5, 6		5
3, 4		3
1, 2	Lowest	1

One exception to this scoring method is in game number 7, Progressive Breakout. In this version, bricks in a wall that move lower during the game can become of smaller point value.

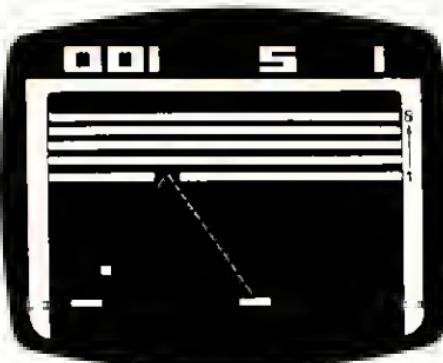


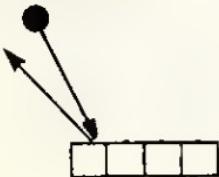
Fig. 17
Game Dynamics

A new ball appears from around the lowest wall and descends at some random initial angle. You use the knob of the paddle controller to move the screen paddle to the left or right; you cannot move the paddle up or down. You press the paddle controller's red button to have a new ball enter the screen; thus after losing one ball, you could rest a while or make a "pit stop" or go and eat dinner without losing your place in the game!

Ball/Paddle Deflection Angles

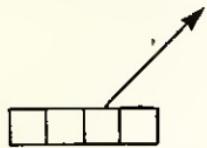
The angle at which the ball leaves the paddle is not subject to the same rules as bouncing a ball off a wall in real life; standard rules of geometrical deflection don't apply. No matter what direction the ball approaches your paddle from, it will deflect to the right if the ball contacts

the right half of the paddle, and to the left if the ball contacts with the left half of the paddle. An example of this is shown below:

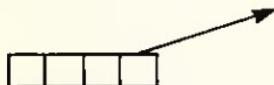


Often the outside portion of the paddle will send the ball back at a lower (more horizontal) angle. To further confuse the novice player, the steepness of the return angles varies during the game:

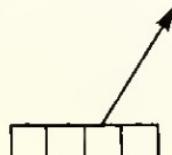
- Up to the eighth hit (“hit” = paddle hitting ball)



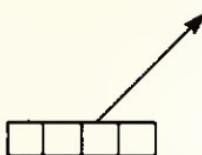
- Eighth hit through sixteenth hit



- Sixteenth hit through forty-eighth hit



- After the forty-eighth hit



The ball’s speed varies, but it increases noticeably after

- Forty-eight hits or
- Hitting a brick in the top four rows (the top eight rows in progressive games).

These bricks will later be referred to as “speed bricks.”

Use of the difficulty switch in position A results in a narrower paddle (the paddle is only about twice the width of the ball, making for an extremely challenging game and lots of misses).

Breakouts

When your ball breaks through the walls so that it can rebound against the top of the screen, it will normally bounce several times up there, taking out a lot of bricks in the process. This is known as a “breakout.” Your score increases rapidly when this happens, but your paddle then shrinks to half the original width—although it becomes wide again after you miss a ball and until your new ball breaks through to the top

again (hits the top part of the screen).

As you clear all the bricks on a screen, a new screen subsequently begins. There is no limit to the number of screens—they keep on coming. A Super Breakout master's score theoretically has no limits!

Game Variations

Selection of different game versions lets you choose among combinations of several game options. These individual features include:

- The number of players (1 or 2)
- The number of paddles (1 or 2)
- Cavity Breakout: The collection of walls has two hollow cavities. In each, a captive ball rebounds endlessly. When you break through to that cavity, the ball escapes and can help you eliminate more of the remaining bricks.
- Progressive Breakout: The screen has four walls, a space, and four more walls initially. They slowly proceed closer and closer to you, along the same lines as Space Invaders but not nearly so rapidly. When they get

very near, they really cause you grief.

- Children's versions.

Helpful Hints

Follow It

PLAYERS HAVE DIFFERENT strategies concerning what they do with the paddle while awaiting the return of the bouncing ball. One good strategy involves moving the paddle back and forth to have it track the position of the bouncing ball. When the ball is moving left, you go left; when it moves right; you move right. Regardless of the up or down movement of the ball, you just track its horizontal position. When executing this strategy, go most of the way toward the sides of the screen, but only go all the way when you have to in order to hit the ball; this slight restricting of your movement makes it easier to track the ball. One advantage of this constant tracking is that you need not accurately predict deflection angles, you just stay with the ball. This forces you to be always in proper position.

Breakout to One Side

You should strive immediately for breakouts in most games. Once the ball gets through to the top of the screen, it has the ability to rebound rapidly and, without any further help from you, wipe out many bricks. Pick one side, either the right or the left. Keep banging away at the walls on that one side of the screen. Also, if for some reason you have selected the left as your target but through mistakes the right side is starting to open up more, don't be afraid to switch to that other side and keep plugging away at it. Simply focus attention on one side and concentrate on getting a breakout there. Incidentally, a good way to practice your aim is to play games in which you concentrate on hitting with just one part of your paddle. Forget about score, and try to hit every ball with the left part of your paddle. Then do the same with the right side and finally the middle. This should greatly increase your control.

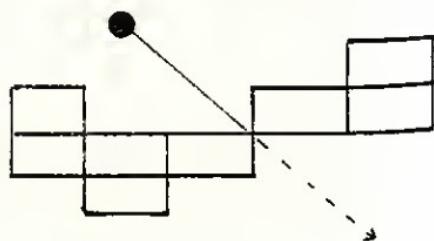
Predict the Return Angles

As an alternative to the constant back-and-forth positioning described above, another

strategy is as follows: Position yourself normally somewhere toward the center of the screen during the "waiting for rebounds" periods. From there, closely analyze the path of the ball and predict its rebound angle. Based on the predicted rebound angle and the distance you are from that wall, anticipate where the ball will cross your horizontal "paddle line" below. Move smoothly toward that predicted position to receive the ball. It's important to move smoothly toward the receiving position so you can more easily make last-minute adjustments. Constantly keep trying to predict the future lines of rebound.

Watch for Sneaky Returns

After the ball breaks through and is bouncing around the top of the screen, be on the lookout for situations where bricks are connected like this:



When bricks are thus connected, a ball bouncing from above will normally rebound back above. However, once in a while a ball might sneak right through at the point where the bricks have only their corners touching. If you are too relaxed when the ball is bouncing above the wall, one can sneak right through and slip past you before you can recover from the shock. So always be prepared for a ball to slip through from above.

Forget the Top Paddle

This pointer applies to the games where the player has two (a top and a bottom) paddles. Consider the case where you're using the bottom paddle to hit the ball, and the ball then rebounds upward toward the top paddle. In this situation, after hitting off the bottom paddle, forget the top paddle. Even if the top paddle appears to be in the way of the return, the ball will go right through it! So don't be concerned about jerking and positioning just right to avoid the top paddle on the rebound; you don't have to.

Overcome That Fear of Small Paddles

As you recall, when you break out and the ball bounds against the top of the screen, your paddle size is cut in half and you play the rest of that ball's life with a small paddle. This admittedly does make the game more difficult, but don't worry too much. Just bear down. Extra concentration can overcome the handicap of having a small paddle.

Slow Going, Fast Returning

You must always be prepared for the ball to come back at you faster than you have just hit it. Remember that the ball will speed up after hitting speed bricks or after 48 hits. At some point in the game the ball will be slow going up, but fast returning. Don't be put into a trance by the slow rhythm of the first part of the game. Always be ready for that fast return so you won't be caught off guard.

Caught in a Loop?

When there are only a couple of bricks left on the screen, it is not uncommon to enter the situation where you keep hitting the ball in the same "circular" path over and over

again. You repeatedly move the paddle to the same two spots to return the ball.

When you see this happening, it pays to try to get out of the loop quickly. To do so, instead of placing the paddle in the same old positions you must position the paddle just slightly differently at one of the sides. Then the ball will leave at a slightly different angle and the loop pattern will be broken, allowing you to try a different path which will hopefully find one of those last couple of bricks.

In Two-Paddle Games, Choose One

In two-paddle games, we suggest that you pick one paddle and stick with it. Try to either keep using the top paddle, or keep using the bottom one. Otherwise it can become too confusing and it becomes too easy to have a momentary mix-up result in a lost ball. Of the two paddles, the top one is probably the better choice. If you are a bit slow in getting to the spot where the ball would hit it, that extra fraction of a second may enable it to hit the bottom paddle rather than be lost.

Progressive Breakout Hints

Don't Waste Any

IN THE PROGRESSIVE BREAKOUT game, the walls keep moving lower, depending on how many times you have hit the ball. This is certainly not the game for people with claustrophobia. In this game it is extra important not to waste any hits or do any "fiddling around." Get down to business, always going for a brick — especially the highest brick which is worth the most points you can get.

Forget the Middle when Walls Are Low

In Progressive Breakout, when the walls get quite low, forget the middle bricks. Go only for bricks at the sides. If you hit the middle ones at close range, the ball rebounds back at you so quickly that you don't have time to react. Those shots can be quite impossible.

Go for the Tough, High-Point Ones

In progressive games, the "speed bricks" are any ones in the top eight rows. If you hit

any of them, the ball travels at the higher speed. Don't try to avoid the speed bricks; the other bricks are worth only one point. It may be more difficult, but it's the only way to get really good scores. Remember, the ball will travel at the higher speed after 48 hits anyway, so go for it.

Plan for when the Walls Drop

In progressive games, when the ball first starts traveling at the higher speed (by either the 48-hit rule or via speed bricks), the walls drop down one notch. After that the walls drop one additional notch after every three hits (for a while). Then they drop down one notch after every two hits for a while, and later they drop after every hit. When you are in the three-hit, two-hit, or one-hit mode, you can actually plan for the drop by hitting the ball to the spot where they will be right after the hit. This takes some practice, but helps a lot, especially on breakout attempts.

Delay the Super Breakout

Try to get as many high (high-point) bricks as you can without breaking through to the top of the screen. If the

ball doesn't break through, then your paddle doesn't shrink in size. Keep the large-paddle advantage for as long as you can. Late in the game when the walls click down a notch with each hit, don't be concerned with this guideline (since it will be nearly impossible to break out anyway).

Cavity Breakout Hints

Save the Solid Ball

IN THE GAMES OF CAVITY Breakout, the captive balls bounce about in the wall cavities until they are released by your breaking through to them. A cavity ball can be distinguished from the regular game ball as follows: The cavity ball seems to "flicker" on the screen, whereas the regular ball retains a solid brightness and tone. Because of its flickering characteristic, the cavity ball tends to be distracting during game play; the regular ball tends to be easier to concentrate on. If both the regular ball and a cavity ball are bouncing freely on the screen and both are going down toward the bottom of the screen together,

then always choose to save the regular game ball.

Ignore the Cavity Ball

You might even go one step further than the hint above. Even if you have a good chance to save the flickering ball, it may be wise to let it go anyway. The presence of two balls bouncing simultaneously can be very confusing. If you save the flickering ball one or two times, it can confuse you, get in your way, or become a pest later on. It may even be the eventual cause of losing your solid ball. We suggest that you just let the cavity ball die a natural death and tend to the regular game ball.

Three Is Ridiculous

One ball on the screen is a challenge, two is confusing, and three is just plain ridiculous! To try to keep three bounding around on the screen simultaneously is plain insanity. It's way too confusing, and there's really no advantage to be gained. Never try intentionally for this. If it just happens, concentrate on the regular ball and let the cavity balls die a natural death.

Get the High Bricks After the Cavity

After the ball breaks out of the cavity, each brick is worth twice its normal amount. Save as many top-row bricks as you can until after the cavity breakthrough. Eliminate the low bricks early, saving the higher ones until the time when they are worth double. Your point total zooms up a lot faster by bricks worth twice 7 (14) than by bricks worth twice 1 (2).

Cavity Balls Are Slower

When a cavity ball is released, it travels a lot slower than your regular game ball. If you must try to keep two going, look for your regular ball first. It rebounds back to you noticeably faster.

The "Other" Ball Has Delayed Speed-Up

Consider the circumstance in cavity games when there are two balls in play at the same time. If one ball, call it ball A, hits a speed brick, then it increases speed right away. The other ball, call it ball B, will speed up after the next time it hits your paddle. Ball B stays at its original speed between the time ball A hits the speed

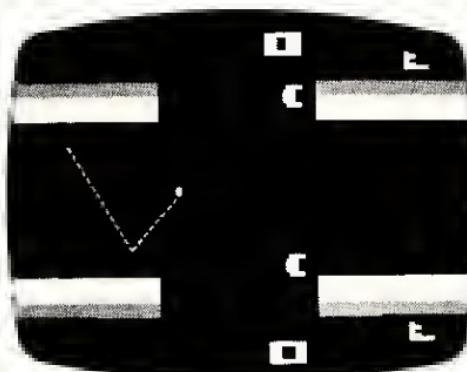
brick and the time ball B hits your paddle.

Together or Else Far Apart

For situations where there are two balls on the screen and you want to persist in keeping both alive, it is best if the balls are either very close together or very far apart. If they are very far apart, then you have plenty of time to hit one and then get in position to hit the next. If they are very close together, then you can tend to

both of them from essentially the same position. If they are some in-between distance from each other, then your job will be a lot more difficult. You can then try to get them back in synch (close together) or farther apart as follows: Hit one with the top paddle and the other with the bottom paddle. This effectively gives the top-paddle ball a boost, letting it either catch up on the other or increase its lead over the other. Check it out!

Warlords



Descriptive Information

THE SCREEN FOR THE WARLORDS game is shown above. Each of the four corners of the screen has the same elements: a warlord, a castle wall surrounding the warlord, and the movable shield which can skirt around the outside perimeter of the wall. The wall is composed of four layers of bricks.

One of the warlords, along with his castle and movable shield, belongs to you. (Some variations allow you to control two, however). The three others, which are either computer-controlled or player-controlled, are all your

opponents. You control the movement of your own shield.

The only other object appearing on the screen is a flying object which is either a "fireball" (if the game selected has "slow speed") or a "lightning ball" (if the game selected has "fast speed"). The ball is set into motion initially; after that it continues bounding around on the screen. In certain game versions the ball can be "caught" by contact with the shield and "released" subsequently to continue its motion.

Your game objective is to destroy the other three warlords before you are destroyed. You do so by propelling

ing the ball at your opponents' castles, chipping away at them brick by brick (the projectile destroys bricks upon contact), and eventually wiping out the warlords themselves. (A warlord can be destroyed even if part of his wall is still standing.) Thus you must continually move your shield to protect your own castle, at the same time striving to send the ball past the opponents' shields to do some damage.

The permissible movement of your shield is along two straight lines parallel to your castle's walls.

The most interesting and popular variations of Warlords are those involving shields that have the "catch" capability. Therefore, much of the material in this chapter is devoted to those variations. As with most of the home-video games, you may want to begin your experience with this game using a simpler variation (e.g., using the slower fireball rather than the lightning ball and not using the catch/release feature). Then as you get more familiar with the game and gain experience, move on to the more complicated game variations.

Helpful Hints

Initial Shield Position

TO START, THE BALL WILL begin at the middle of the screen and will be propelled diagonally toward one of the four corners as shown in the drawing below:



Therefore, always position your shield right at the corner of your castle wall to begin.

General Shield Position

If the game is not of the catch/release variety, then you should continually be watching the ball, trying to predict the rebound angles, and moving your shield to the predicted point of contact near your castle wall. If the game is the catch/release variety then you must pursue one of two modes: (1) Watch the player with the ball and try to track (follow) his motions, keeping your shield and the opponents "lined up" to block the ball should it be released at any time; or (2) once the ball is bouncing freely, try to

predict the rebound angles and move the shield to the predicted point of contact near your wall.

Try Not to Overreact

In general when tracking the opponent and predicting rebound angles, there is a tendency to overreact more than underreact. This is especially true of less experienced players. Therefore it may be helpful to try to "control" your reactions initially. If you move only part of the way to follow an opponent's fake or toward a ball coming off a tricky rebound angle, it will be easier to make a last-minute adjustment in the event of a good fake by the opponent or a wrong initial prediction of the angle.

Try the Lower Right

In a multiple-player game, try the choice of controller which gives you the warlord in the lower right corner. This one seems more natural to many players regarding the movement of the shield, especially in emergency and "pressure" situations. The reason for this seems to be that clockwise movement of your controller results in clockwise movement

of the shield (and counter-clockwise controller movement results in counter-clockwise shield movement). This could be easier to master.

Anticipate the Speed of the Ball

The speed of the ball is determined by what it last hits; the darker the brick, the faster the ball's rebound. It also speeds up after destroying a warlord or being released from a shield where it has been "caught." Keep this in mind as you position your shield for its next assault.

Angles Are the Important Thing

Becoming expert at this game requires thorough understanding, intuition, and prediction of the ball's rebound angles. Concentrate heavily on these. Always try to visualize the rebound path in advance, trying to have the imaginary path "burn" a line onto the screen as seen by your mind.

Computer Shields Are Slower

The computer-controlled shields are a bit slower than shields moved by humans. Thus you can always beat the computer shield in quick, deliberate moves of your shields. The solution posed

ater in this chapter makes use of this fact. You should rely on it too!

Computer Releases Can Be Unusual

The ball being released from computer-controlled shields can do funny things. Some of the angles which it leaves at are strange or even impossible compared to what can be done by human players' releases. So be ready for anything.

Computer Shields Are Quicker Vertically

The computer seems to be able to move its shields better (faster) vertically than it can move them horizontally.

Different Levels of Intelligence

From general overall experience with the computer-controlled game, the behavior of the green is usually the least intelligent. The blue warlord usually seems to behave in the most intelligent fashion.

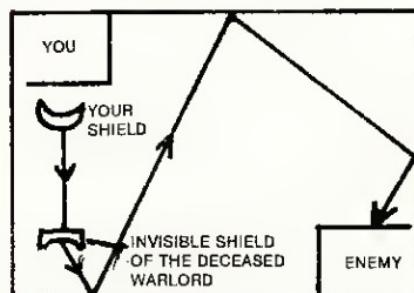
Shields of the Deceased

The shield of a player-controlled warlord remains on the screen for a few seconds immediately following that warlord's destruction. The shield is "invisible," but it can still deflect the ball. Thus it is

best to wait a few seconds before firing in the general direction of a recently deceased player-controlled warlord. The ghost of the shield of a computer-controlled warlord remains on the screen indefinitely following that warlord's destruction. These will continue to move.

Use the Shields of the Deceased

The shields of deceased computer-controlled warlords continue to track your movement. Their ghost is visible for a fraction of a second when the ball bombards a remaining brick, thus reassuring you of their staying power. Assume that you are the upper left warlord, and that only the diagonally opposite (lower right) warlord remains. See the figure below:



In this case you can successfully destroy part of the remaining enemy castle wall as shown. Move your shield to

the position shown and wait a couple of seconds to be sure the ghost shield has tracked you and stands exactly opposite. You cannot see it, but after a second or two it will be there. Release the ball straight down as shown. It will deflect toward the right when it contacts the ghost shield. The remaining rebounds will be approximately as shown. The ball should destroy the far corner of the enemy's castle wall as indicated. The same idea can then be used to destroy the enemy warlord. If this doesn't seem to work perfectly at first, slightly adjust the position of your shield until you locate just the right position.

A Solution Method

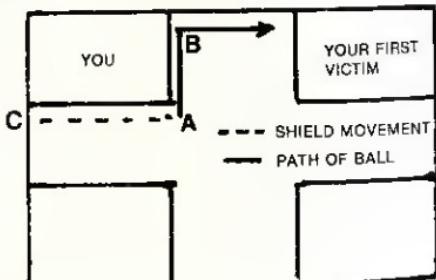
NEXT WE REVEAL A WINNING procedure which can be learned and applied, even by relatively inexperienced Warlord players. This applies to game 4 and game 9, the one-player catch-and-release games. Several of the individual steps can also be applied to other game variations. The general idea consists of these three steps:

- (1) Destroy the opponent horizontally opposite (i.e., the blue warlord).
- (2) Destroy the opponent diagonally opposite (i.e., the purple warlord).
- (3) Destroy the opponent vertically opposite (i.e., the green warlord).

The details of each step follow.

(1) Destroy the opponent horizontally opposite:

The first time you capture the ball, move your shield to the corner spot indicated by **A** in the drawing below, and wait a second for the opponent horizontally opposite to posi-

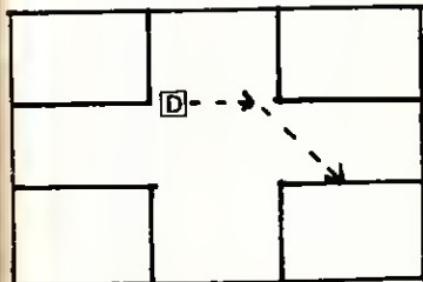


tion the shield opposite yours. Then quickly go to your uppermost position, indicated by **B**, and immediately release the ball toward the top of his castle wall just before his shield arrives there to block.

You will wipe out at least part of his wall, and if you're lucky, the enemy's shield will arrive in time to send the rebound right back into his own castle wall. Should the ball escape and bound away from his wall, catch it and repeat the above procedure. Eventually, enough of the top part of his wall will be eliminated, allowing you a similar open shot at the enemy warlord. Presto! One of the three enemies already gone! (Since the blue warlord is the most intelligent one, and split-second timing of your release of the ball is essential, you may find it easier to fake him out by going slowly back and forth a few times from **B** to **C** and then finally zipping from **C** to **B** and releasing the ball there before he has a chance to catch up with you.)

(2) Destroy the Diagonally opposite opponent:

Move your shield to the point **D** in the diagram below.



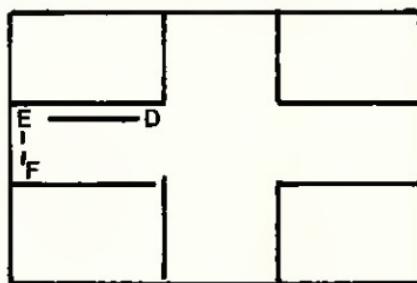
This point is such that the top and bottom edges of the shield line up with the edges of the second brick layer from the top. Again allow a second or so for the ghost shield to line up horizontally across from you. Fire the ball at that ghost shield. If you are positioned properly, and if there are no bricks left over near the corner of your first victim's castle wall, the ball will deflect as shown and destroy some of the right corner of your second victim's wall. (If there are bricks from your first victim's wall in the way, blast them out of the way first.) Repeatedly catch any rebound and apply the diagram until enough of the wall is worn away and the warlord behind it can be similarly destroyed.

(3) Destroy the opponent Vertically opposite

Move your shield to the corner **D** in the diagram below, letting the green warlord's shield track you to that point. Then move quickly to point **E** and release the ball without delay. This will destroy a part of the wall at point **F** and allow you to catch the rebound. Repeat this procedure until wall **F** is eliminated,

and then use the same procedure to destroy the final warlord enemy. This completes the procedure, giving you victory in the battle. This

would actually then be repeated to give you a series of five "battle" victories, thus winning the "war" and ending the game.



Yars' Revenge



Descriptive Information

YARS' REVENGE COMES PACKAGED with two booklets: One contains instructions and the other tells the story of the Yars in comic-strip fashion. In this game, you control an electronically simulated fly which busily buzzes around the TV screen seeking to destroy the enemy base (called the Qotile) and the strange swirling objects spawned by it.

The screen for the Yars' Revenge game is shown above. The Yar is shown at the left, but it is free to move about the screen under your control. Your Zorlon Cannon, once it appears, is restricted to move up and down at the left edge of the

screen; the Qotile and its shield move up and down on the right side. The Neutral Zone is the only game element which is essentially stationary—and even that is constantly shimmering.

Game Elements

The major elements of the game, and their most important descriptive characteristics, are discussed next.

Yar

The fly can go anywhere on the screen, but you can only point it in one of the usual eight possible directions. Its movement is always in the direction it points. Pointing it in the straight north, south,

east, or west directions is easily accomplished; pointing it in one of the other, diagonal directions is harder to do. It can wrap around the screen vertically—that is, if it goes down through the bottom of the screen, it will reappear at the top, and vice versa.

Energy Missile

When you press the red "fire" button, an energy missile is released in the direction the Yar is pointing. It will wipe out groups of cells in the enemy shield (up to five at a time), but it is not effective against the Qotile itself. Only one energy missile can be on the screen at a time. These weapons do not exhibit any wraparound action; once off the screen, a missile is not to be seen again. You have no access to your energy missiles as long as the Zorlon Cannon remains on the screen.

Qotile

This is your primary enemy. It is nestled behind a shield which very slowly moves up and down with it at the right edge of the screen. Periodically, the Qotile forms a Swirl that is ejected from the enemy base.

Shield

This is a wall composed of many individual cells that resemble bricks. The shield protects the Qotile and moves up and down with it at the right. During the first wave of the game (a "wave" is the period up until the Qotile or its Swirl is destroyed), the composition of the shield is constant; that is, a particular cell stays at its same relative location within the shield. The shield is constant during all the odd-numbered waves (1, 3, 5, etc.). During the even-numbered waves (2, 4, 6, etc.), the shield is varying; its cells continually change positions within the shield. (The cells and holes in the shield all seem to be moving in a downward, left-to-right spiral. This is not a precise description; the shield must be seen to be understood.)

Destroyer Missile

This is a slow-moving but deadly device that the Qotile releases immediately. It starts traveling northwest and from that point on it becomes a real nuisance following you around. It costs you a life if it contacts you outside of the Neutral Zone. One limitation

of the Destroyer Missile is that it cannot follow you as you wrap around from one edge of the screen to the other.

Zorlon Cannon

This appears at the left edge of the screen when one of these conditions occurs:

- The Yar eats a cell in the shield or
- The Yar touches the Qotile

The cannon tracks your up and down movement, but not your movements to the left or right. Once it appears, your hitting the fire button causes it to travel to the right in a horizontal line. It is your most powerful weapon—it can destroy you, the Qotile, the Swirl, but only one cell at a time in the shield. It travels at about the same speed as the Yar.

Swirl

This weird device emerges about every fifteen seconds early in the game and about every seven seconds later in the game. It is fairly intelligent. In early waves, it is emitted at an angle toward your position at the moment of release; it travels along this angle until it leaves the screen. However, after several waves

it will change its course and track you as you attempt to evade it.

Neutral Zone

This wide vertical strip of shimmering material in the left-center of the screen protects you from the wrath of the Destroyer Missile. It does you no good against the onslaught of the Swirl. When you are in the Neutral Zone, you cannot fire an energy missile or the Zorlon Cannon. Note: At very high scores, the zone will be absent for some of the waves.

Scoring

You are given three lives at the start of the game. Points and additional lives are obtained as follows:

Action	Points	Bonuses
Destroy cell by missile	69	
Cell eaten by Yar	69	100 points
Destroy Ootile	1,000	
Destroy Swirl in place	2,000	
Destroy Swirl in flight	6,000	An extra life

Controls

The joystick controller is

used. Moving the stick rotates and advances the Yar in the direction you indicate. Pressing the red button fires an energy missile, or the Zorlon Cannon when it is present.

Game Variations

Game 2 is the normal, one-player adult game. The complete set can be summarized as:

Game #	Game Description
0	Child, one-player
1	Child, two-player
2	Adult, one-player
3	Adult, two-player
4	Bouncing Zorlon Cannon, one-player
5	Bouncing Zorlon Cannon, two-player
6	Ultimate Yars, one-player
7	Ultimate Yars, two-player

Helpful Hints

This section gives a variety of helpful hints which can be used to improve your performance as the Yar. Read these and see how good you are as Yar.

Sometimes a Touch Is Enough

We know that when the Yar

is in the Neutral Zone, he cannot be harmed by the Destroyer Missile. But what exactly does "in the Neutral Zone" mean? On some cartridges we've seen, the Yar is safe if any part of him just touches the zone. On other cartridges it seems that the Yar has to be entirely in the zone to be safe under all circumstances. You may have to experiment with your cartridge to determine precisely how far in you have to go to be immune to the death touch of the Destroyer Missile. The point where the Yar is immune is the same point where his ability to fire missiles and cannons ceases; this much does seem consistent.

Right Face

In order to consume cells in the shield, the Yar has to face the front of the cell. This means that for the constant shield, the Yar has to face to the right. If he tries to eat constant-shield cells from the side (i.e., facing upward or downward), he takes a big bounce around to the front of the shield. Also note that the Yar bounces a short distance backward each time he properly pecks away at a cell.

Eating Cells in the Constant Shield

When you are playing a wave with a constant shield, as much as possible you should try to eat the cells rather than zap them by means of the flying ammunition. By eating the cells (as opposed to firing at them), you acquire an extra 100 points per cell; this may not seem like much if you think about one cell, but for the entire shield this makes about a 10,000-point difference! The extra reward certainly makes it well worth your while to struggle to eat almost the entire shield. The Destroyer Missile is a constant pain in the neck during this consumption process. Trick him by luring him over near one of the far left corners of the screen. Then hustle over to the shield and nibble away. When the Destroyer Missile gets too close for comfort again, repeat the luring process. That missile is slow enough to permit time for consumption of many cells between each lure. Also, you have to keep constant watch for the appearance of the Swirl. When this occurs, retreat rapidly and either avoid or destroy the Swirl;

then return to the luring and cell-eating process.

Eating Cells in the Varying Shields

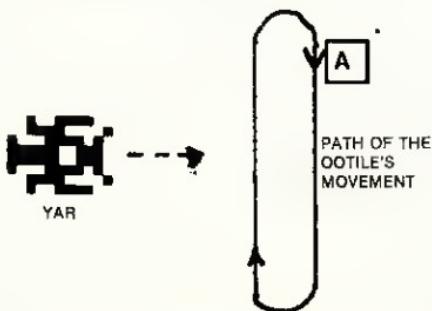
In the varying shield, the cells continually rotate in a left-to-right downward spiral. For these shields we suggest going to the bottom of the shield and eating some cells there. When the Destroyer Missile gets too close, wrap around to the top of the shield and peck away there. When the Destroyer Missile gets too near the top, wrap back around to the bottom. You never have to go to the middle area since the cells rotate and all eventually get to the top and bottom; this actually helps as far as eating cells is concerned, although it makes nailing the Qotile more difficult. When the Swirl starts after you, you should be able to avoid it since you will be near the top or bottom edge and can use the wraparound feature to escape it quickly.

Point Max

If your goal is to try to maximize points while taking some risks, then try to take advantage of every bonus-point situation. Try to consume

nearly all the cells of the shield before destroying the Qotile or Swirl, which ends the wave. Also try to nail the Swirls when they are in flight, rather than when they are stationary. This nets you 4,000 extra points if you can achieve it. Tips on how to hit the Swirl in flight are given later.

One Good Turn Deserves Another
 Once the shield has been sufficiently eroded, you can try to destroy the Qotile with your Zorlon Cannon. Since the Qotile is in constant up-and-down motion, you have to have the shot lead it by a small distance, allowing the Qotile to glide into its path. In order to accurately lead with the shot, we suggest firing soon after the Qotile has made its turn at either the top or the bottom. Fire, for example, when the Qotile is around point A below:



This way you are sure to have

the Cannon fly when the Qotile glides along a straight portion of his route.

Shoot More Bricks in Later Waves
 The Destroyer Missile gets progressively faster with each new wave, becoming more of a menace to you as you try to devour cells. As this occurs, you will have to shoot more cells and consume fewer. This is especially true for the cells near the center of the screen. So eat what you can early in the game, but gradually convert to shooting a higher percentage of them. As your skills improve with practice you will be able to devour more cells later in the game.

Rapid Cell Destruction

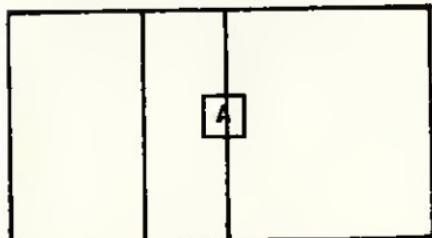
As mentioned above, devouring the cells of the shield is the way to go for maximizing your points. But if you want to quickly wipe out large parts of the shield, use your energy missiles to do the work. An energy missile can consume up to five cells at a time, whereas the Zorlon Cannon or nibbling each consumes only one cell at a time. A word of caution: If you want to continue using energy missiles, remember not to touch the Qotile or eat a cell

in the shield, since either of those actions will deactivate the energy missile and activate the Zorlon Cannon.

Get Even with That Swirl

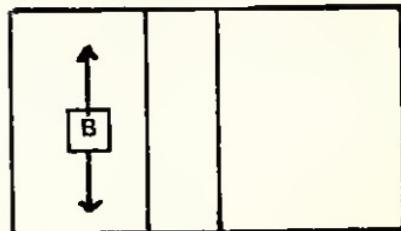
Bombing the Swirl when it's in flight nets you 6,000 points and an extra life, and therefore deserves special attention. The following techniques can help you accomplish this in early waves of Yars' Revenge. There are two preliminary steps involved: luring the Destroyer Missile out of your way, and getting into good position for a shot. Here's how to do it:

- Hover at the right-hand edge of the Neutral Zone as shown by point **A**. This protects you from the Destroyer Missile and also keeps it away from the left part of the screen.

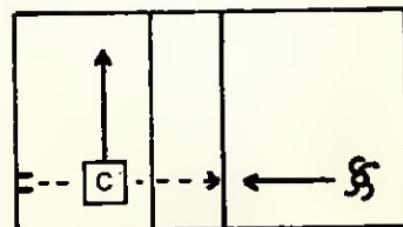


- At the moment the Swirl appears, go to the left-central part of the screen, indicated by point **B**. From there, move straight up and

down to stay parallel with the Swirl.



- At the precise instant the Swirl releases, beginning its flight, fire your Zorlon Cannon and immediately head down or up to avoid both the Zorlon Cannon and the Swirl.



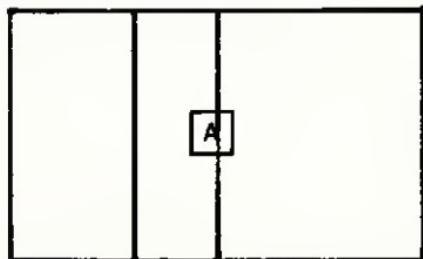
The key here is to stay even (parallel) with the Swirl, so that at the moment of release he will head straight toward you in a horizontal path. This makes him an easier target for the Zorlon Cannon.

Nailing Persistent Swirls

Above the 150,000-point mark a Swirl no longer continues on a straight-line flight past you if you jump up or down to avoid it. The later-wave Swirls have more staying

power and remain in midair flight to try to adjust their flight plan and track you down. When this starts to happen we suggest you try to nail them on the initial part of their flight; it's really difficult to generate a good offense when you are trying to duck at the same time. Your strategy varies slightly from that described in the preceding section.

- Position yourself at the right-hand edge of the Neutral Zone, at point **A**: From there, move up and down to track the Qotide.



- When the Swirl appears, continue tracking but go to the right just a bit, leaving the Neutral Zone.
- After a total delay of about a second, fire your Zorlon Cannon and immediately run to the bottom or top edge.

The problem here is that because of the randomness built into the game, you don't know precisely when the Swirl

will be released toward you; you just have to guess. Your goal is to fire the cannon just slightly before or as the Swirl is released; this way your fire will reach the Swirl just as it begins its flight. If you can catch it in the very first part of its flight, it won't have much of a chance to curve or deviate. If your timing is slightly off, it's much better to have fired a bit early than late. If you're early you nail the Swirl before its release. If you're late, it will be difficult to nail it, and it is given a chance to eliminate you. So be early, rather than late here!

Avoiding Persistent Swirls

If your desire is not to destroy, but to avoid, the Swirls with the late-in-the-game staying power, then try this: Before the Swirl will be releasing, position yourself in the upper-left or lower-left corner so that you are very near either the top or bottom edge of the screen. When the Swirl is approximately a little over halfway across (i.e., near the Neutral Zone), go off the top or bottom edge of the screen using the wraparound effect. If you have waited long enough, the Swirl will not be

able to recover in time to meet you at your new location. Remember to wait long enough; if you commit yourself too soon, the Swirl can figure out what you're up to and can intercept you at your target location.

If You Have Nine, Just Avoid

Destroying the Swirl in flight can earn extra lives for you; but the limit of lives which you may store up is nine. Wipe out the Swirl in flight as often as possible early in the game when it's easier. Build up an early stockpile of extra lives up to the limit of nine. When you know that you already have nine lives, the benefits of nailing the Swirl in flight may not outweigh the risks any more—there is a point in the game when the law of diminishing returns sets in. Unless you are a real expert and hot in pursuit of big point totals, just avoid the more dangerous Swirls if you already have nine lives accumulated.

Circle Around Behind the Swirl

Here is another helpful hint useful in avoiding Swirls with staying power. Swirls are unable to travel backward (to

the right). Once released, a Swirl can never go back in the direction from which it came. Thus any time you can circle around back to the right of it, you have won the battle of avoidance. The following procedure should bring you success:

- Go to the upper-left or lower-left corner of the screen.
- When the Swirl is most of the way to you, duck off the screen.
- Tunnel backward to the right as you leave the screen.
- Reappear farther to the right than the Swirl when you reenter; you are then safe!

The Bouncing Cannon

Games 4 through 7 feature a resilient Zorlon Cannon which can add some difficulty to your life. If the Zorlon Cannon is fired into the shield, it can bounce off the shield and be hurled back toward the left of the screen. If you are unfortunate enough to be in its way during its return flight, you are a goner. But at least the return flight is perfectly horizontal; it does not angle up or down, nor does it curve. This helps somewhat. After you have fired the Zorlon

Cannon and instinctively duck up or down, stay there long enough before returning to your original position (or beyond it). Train your mind to be accustomed to this small extra delay every time you fire your cannon.

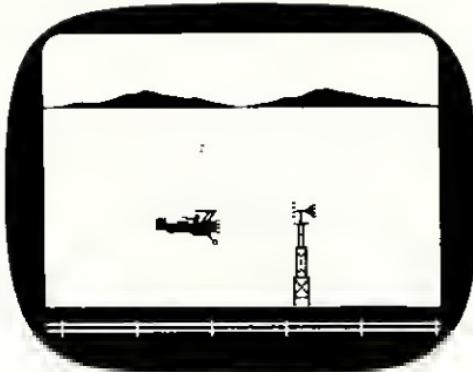
Don't Let Success Go to Your Head

If you blow up the Qotile or the Swirl, the screen explodes and flashes and shrinks into a horizontal band. The Yar stays on the screen during this intermission, and you are free

to maneuver him around the entire screen. The Atari instruction booklet suggests you "make up your own victory dance" during this time, but you are cautioned that contact with the mean streak of the Ghost of Yars could have unpleasant results. If you play around in the wrong places during intermission, it could result in a strange display (the initials HSWWSH) and game shutdown. If you really want to keep your game going, do your victory dance away in a corner.

Activision Games

Barnstorming



Descriptive Information

BARNSTORMING IS AN Activision game with very cute graphics. In it you are the pilot of a biplane; during your flight you must maneuver so that you

- Fly over all windmills
- Fly through all barns
- Avoid all geese in the skies

Your objective is to fly through the complete course in minimum elapsed time.

The figure above shows what the TV screen looks like during the Barnstorming game. It shows the side view of your plane and the course during the flight. Only a narrow piece of the total course is shown at any one time. You

are at the left of the screen flying toward the right. As you travel, obstacles (windmills, barns, and geese) appear at the right side and seem to come toward you, eventually disappearing off the left side of the screen. The baron shown in the plane on the TV screen comes complete with a scarf which waves at various speeds in the wind, depending on your speed. Note the three possible horizontal rows shown; we'll call row 1 the highest row, row 2 the next, and row 3 the lowest row. Each goose is constrained to travel in one and only one of these rows; a goose cannot jump to a different row during its flight. The geese all travel at one speed which is

always slower than yours.

You use the joystick controller for this game. Moving the stick up and down causes your plane to rise or drop in altitude. Moving the stick sideways has no effect. Leaving your red button (the accelerator) alone lets you travel smoothly at the slowest possible speed. This certainly allows you to avoid obstacles more easily, but it does not help you finish the course in minimum time. If you keep holding the red button down you accelerate and travel at the fastest possible speed. During your flight you can press and release the accelerator at will, speeding up and slowing back down as you go.

If you don't accelerate at all in a game, no geese will appear. If you slow all the way down and pass any remaining geese, no new geese will appear if you stay at the low speed.

Your game score is actually the elapsed time required to finish the course. This time is shown on the screen in minutes (if necessary), seconds, and hundredths of seconds. The maximum length of time any game is permitted

to last is five minutes.

Hitting Obstacles

If you hit (come in contact with) any of the barns, windmills, or geese during the flight, you are delayed in your trip as follows:

WINDMILL: If you hit a windmill your plane is pushed backward and somewhat upward from the point of contact. Also flight is "suspended" and delayed for about a second. (If you don't touch your joystick the plane will eventually bump itself onto a clean course.)

BARN: If you hit this, the same delay occurs as for the windmill. You are also repositioned upward and backward. If most of the plane is into the barn opening and the top of the plane grazes the barn, your plane is thrust downward. You still lose some time, but this downward thrust does help you through the barn opening.

WEATHER VANE: If you avoid the barn but do hit the weather vane on top of the barn, you don't bounce

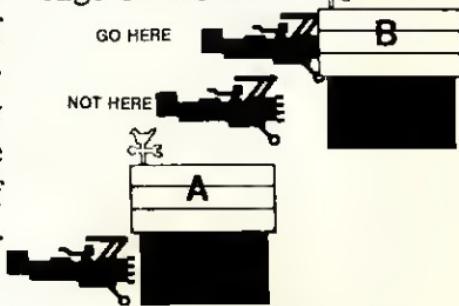
Game	Course Pattern	Barns	Other
1	fixed	10	—
2	fixed	15	Geese easier to avoid
3	fixed	15	Geese harder to avoid
4	random	25	—

Fig. 18

backward. However, you do lose a fraction of a second.

GEESE: If you hit a goose you keep moving forward, but you lose about two tenths of a second each time. In addition, that goose and any others in front of it in the same row will stay in front of you to further hinder you until you pass them.

barn roof peak to get through it. On difficulty A the plane must be much lower, flying completely under the lowest edge of the roof.



Game Variations

There are games numbered 1 through 4 in Barnstorming. The variables are the number of barns (and therefore the length of the course) and whether or not the elements in the course appear in predetermined or random positions. These variations are shown in Figure 18.

The positioning of the "difficulty" switch adds another dimension to the game. On difficulty B the plane has to be essentially anywhere under the

Helpful Hints

A Stitch in Time Saves Nine

YOU NATURALLY WANT TO travel at the fastest speed as much as possible. However, it can be much more costly to hit a barn or a windmill than to ease up on the accelerator just a bit. Often it is best to slow down slightly if it means the difference between hitting or missing a major obstacle. Hitting a goose, however, does not penalize you nearly so

much; therefore, you may want to stay at top speed and risk hitting one of your feathered fellow flyers.

If Uncertain, Stay Mid-Screen

Your sight is limited to the major object or so very near you, and you therefore may not know whether a barn or a windmill will be the next important obstacle. If you don't know for sure whether you are about to encounter a windmill or a barn, position yourself approximately at an altitude equal to one-half the height of the windmill, or just a bit more. This puts you in good position for maneuvering either upward to pass a windmill or downward to fly through a barn.

Up and Down Do Cost You

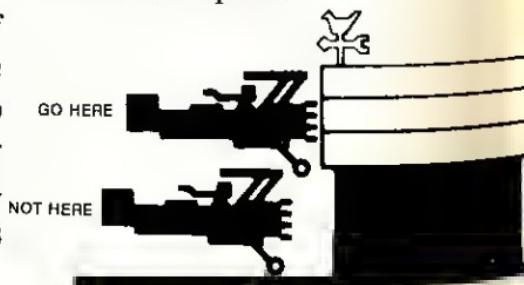
To some players it seems as though maneuvering up and down does not affect their speed and time. However, extra vertical movement (up or down) does have the effect of slightly lengthening game time. Thus one guideline to go by is "Don't waste any up or down movement unnecessarily." Our next two suggestions follow logically.

Don't Get Too High

When flying over windmills, fly just over their tops. Don't go way up to the screen's top if you don't have to. You may have to at times, of course, to avoid geese. Flying just over their tops instead of way up high can save you precious seconds.

Don't Go Too Low

Don't go any lower than you have to when flying through barns. On difficulty A you don't have too much choice. However, on difficulty B you can fly just under the roof peak and still get away with it; you don't have to drag your belly on the ground to get through a barn on that difficulty. Going just under the barn peak also makes it easier for you to climb rapidly when exiting from the barn; this may permit you to narrowly squeeze through a flock of wild geese and still maintain maximum speed.



Try the Tape Trick

One of the secrets of mastering Barnstorming is to know the perfect heights for negotiating the barns and windmills (and, of course, to be able to steer to these levels rapidly). Here's one good trick to help you get accustomed to these optimal levels: Once you have found by trial and error what these two best levels are, mark them on your TV screen with two pieces of masking tape. This helps you get quickly to those levels and go back and forth between them. With practice you can train yourself to get to the best levels. After you get to know them pretty well, take the tape off. You should eventually be able to get to the perfect levels almost without thinking. Hint for kids: Check with Mom or Dad before applying the tape, just to make sure that it's okay.

Missed Barns Haunt You Later

Intentionally avoiding barns really doesn't buy you much. If you do avoid passing through a barn, the barn will be added to the tail end of the course and you will have to fly through it later. For example, if you miss two barns, an extra two barns are added to the

end of the normal course. Avoiding barns just prolongs the agony and adds unwanted seconds to your game time.

Get Acquainted the Gooseless Way

For beginners, of course, it makes sense to start on game 1 to get familiar with Barnstorming. Also, try to just go at the slowest speed initially. This is not only easiest for maneuvering up and down and avoiding any major obstacles, but it also prevents the entrance of any geese onto the screen. When you're trying to learn the game, why clutter up the picture with those foul flyers?

Pass a Goose, Don't Be Too Loose

When passing a goose in flight, you may be tempted to start the next up/down move as you're flying by the goose. However, you should note that starting your next up/down move too early can cause the tail end of your plane to just nick the tip of the goose's beak as shown below:



Note that this still counts as hitting a goose, and your plane will be slowed down accordingly. Don't get too confident as you cruise by a goose; even nudging its beak is just as costly as crashing head-on into it.

Commit the Course to Memory

For games 1, 2, and 3, where the courses are predetermined, the best way to the lowest speed is through memorization. Memorize the entire sequence of major obstacles. Always know whether a barn or a windmill is the next obstacle coming at you. Knowing the course like the back of your hand permits slick, confident maneuvers. For example, in game 1 there is only one place where two barns appear together; single barns appear at all other barn spots. Thus you essentially only have to memorize the numbers of windmills. The entire course, as well as the solution for game 1, is shown in Figure 19. The numbers of windmills in the individual "groups," as you can see from the figure, is:

1 1 1 2 3 1 2* 1 3

The * indicates that this group

of two windmills is the only group followed by two barns; all other windmill groups are followed by one barn. Thus to memorize the first course (game 1), you need only know the sequence of nine numbers indicated above! Looking at it that way, it's not too hard to memorize an entire course. Similar memory aids apply for games 2 and 3.

Down After a Barn Crash

After you hit a barn, your plane is thrown back and upward and the animation is suspended momentarily. Once the motion begins again, you must dive downward in order to get through that barn. Don't wait until motion begins again to start your next maneuver—hold the joystick down as you are waiting for the game to resume. That way you'll be sure to dive as rapidly as possible. Hitting the same barn twice would really foul up your game.

Solution for Game 1

THE FLIGHT PLAN INDICATING the solution for game 1 is shown in Figure 19. This solution assumes that you are

on difficulty B. It also assumes that you hold the accelerator down constantly for the entire flight; this ensures that you fly at maximum speed all the way and therefore that you get through the course in minimum time.

Hold the accelerator button down even before you start the game; you don't want to have any unnecessary delay at the very start of the flight!

Follow the figure across from left to right, top to bottom of the page; the course is shown in four segments rather than being stretched out in one very long, thin drawing. Notice the three lines indicating the allowable rows in which the geese fly. In order to keep the drawing from becoming too cluttered, only the important geese, which you might have to fly above or near, are shown.

These notes relate to the points marked **A** through **F** in the figure.

A Go between the two geese in row 2 as shown. This is not a particularly difficult move.

B At this point, the plane barely fits between the geese in rows 2 and 3. This move will require practice, so

don't be discouraged if you cannot execute it properly in the first few attempts.

C Drop down quickly after passing the goose indicated in row 3. You have to do this to avoid the goose ahead in row 2.

D After going through barn number 6, rise as rapidly as you can. Fly above the three geese as indicated and then descend. You should fly above only three geese here.

E Here you must also rise extremely rapidly, to get above that one goose in row 3. After that one goose, come right back down.

F This is another tough move, similar to that indicated in **B** above.

Solution for Game 2

THE SOLUTION FOR GAME 2 of Barnstorming is indicated by the flight plan given in Figure 20. To follow this solution, which also assumes B difficulty, hold the accelerator button down before the game actually starts so you get off to a good start. Refer to the drawing for the following notes:

A Don't rise too rapidly

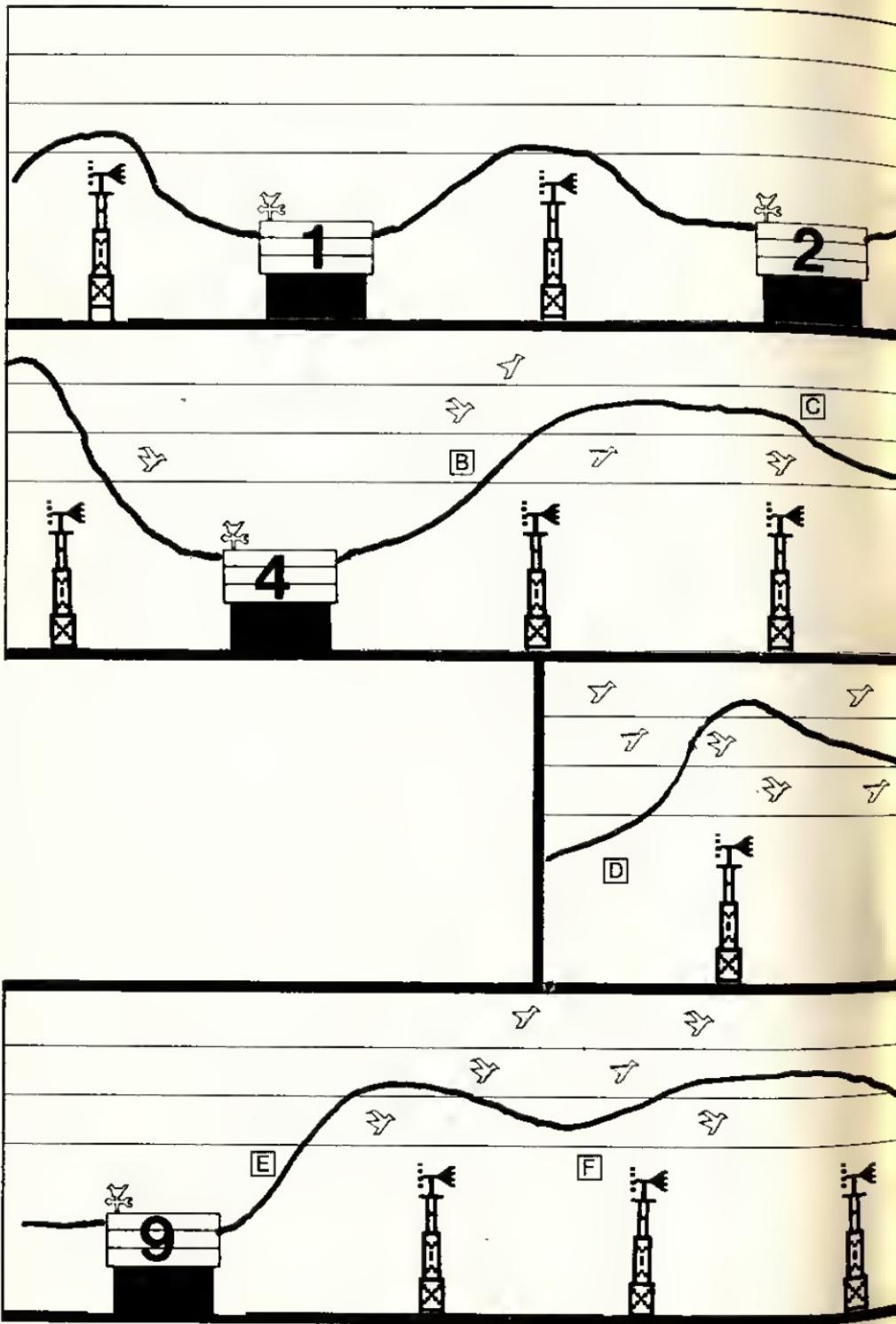
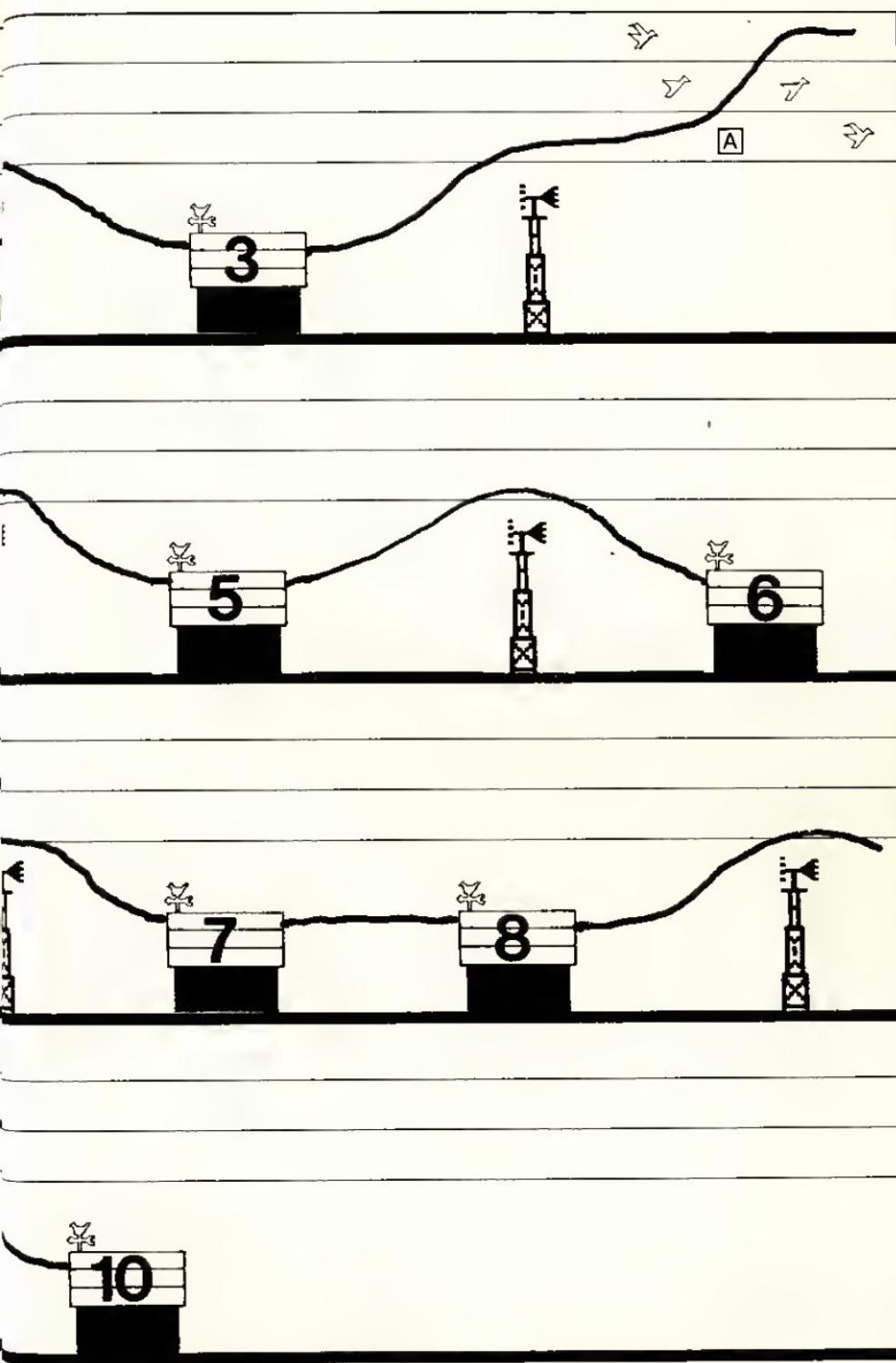


Fig. 19. Solution for Game 1



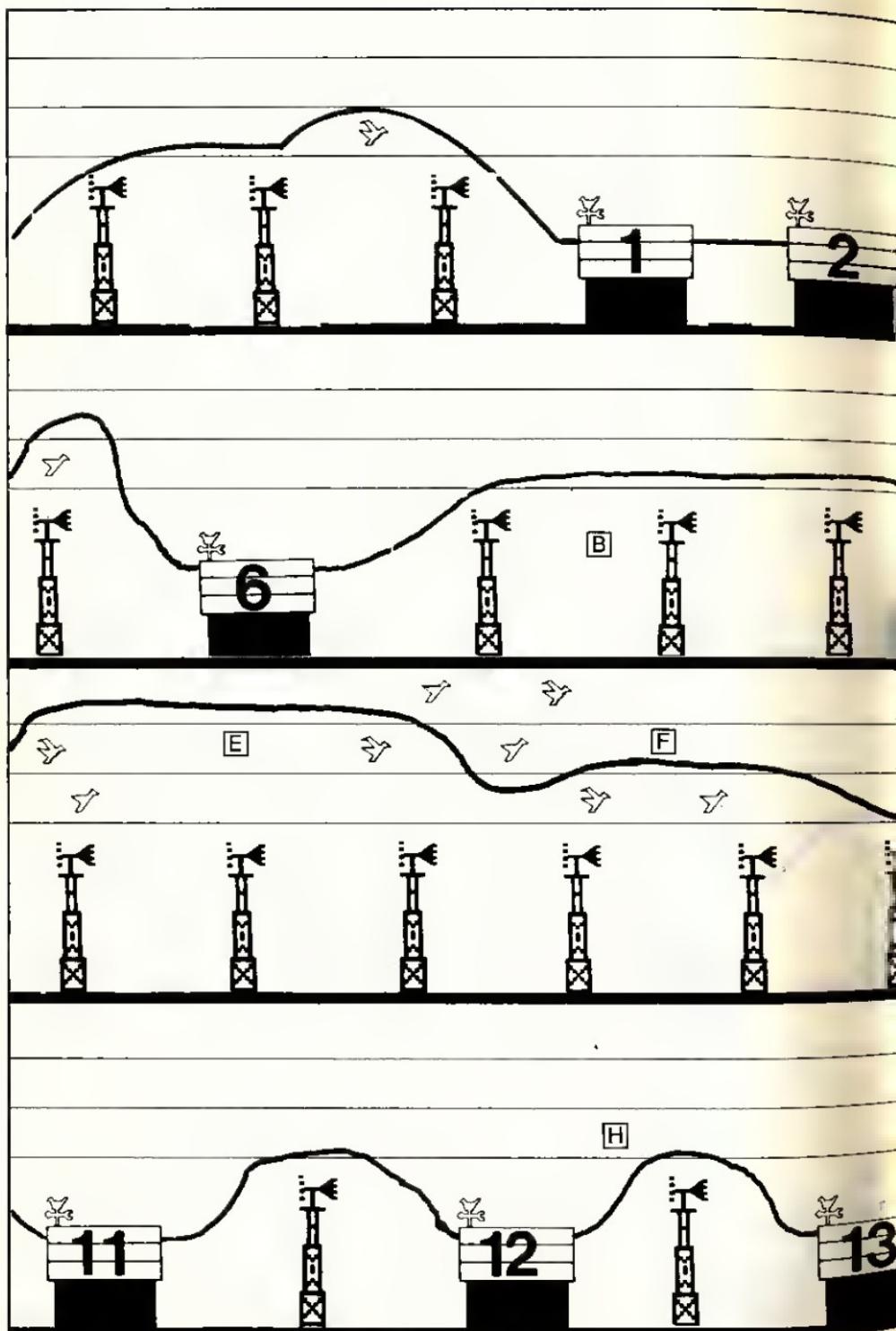
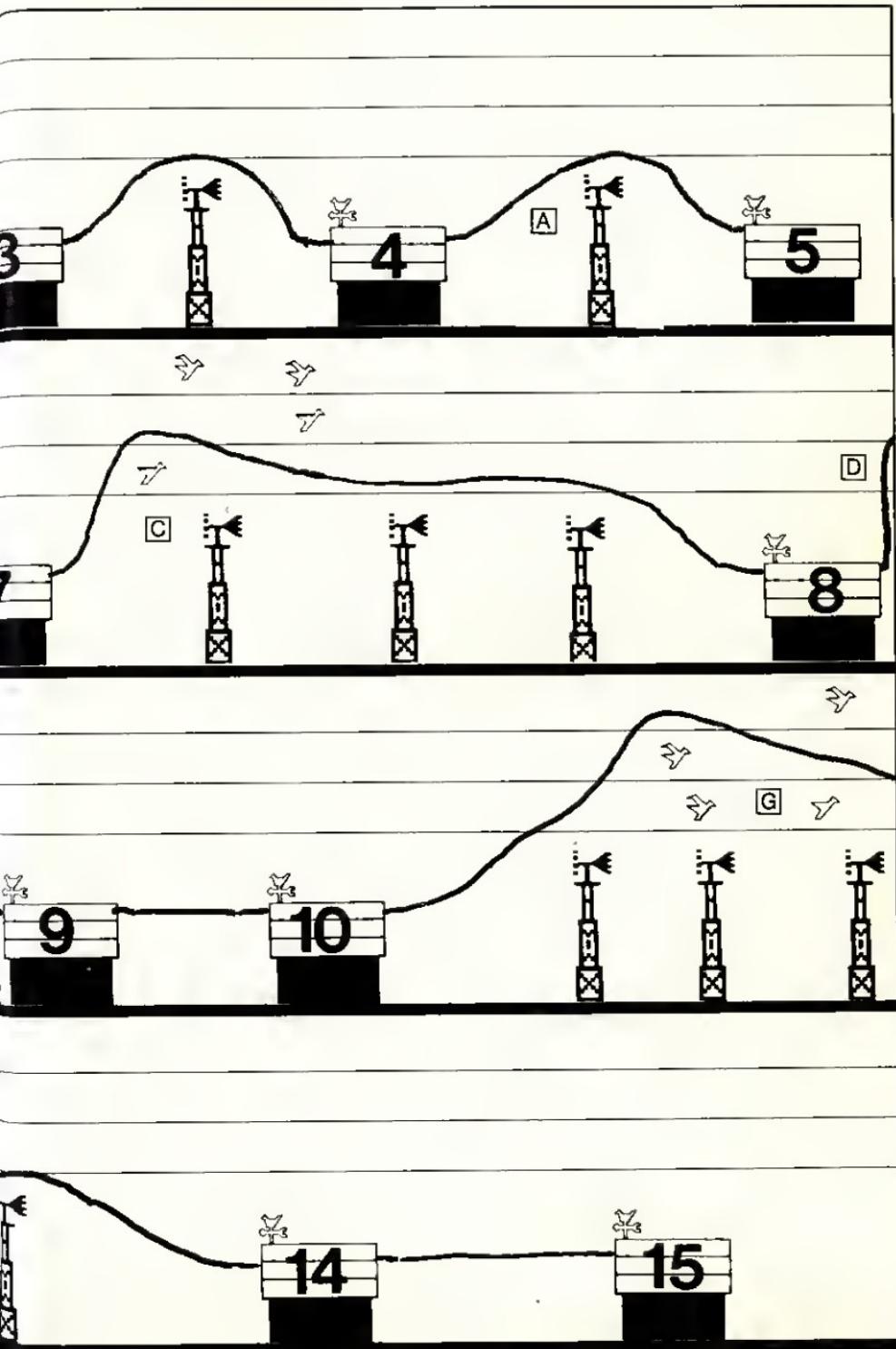


Fig. 20. Solution for Game 2



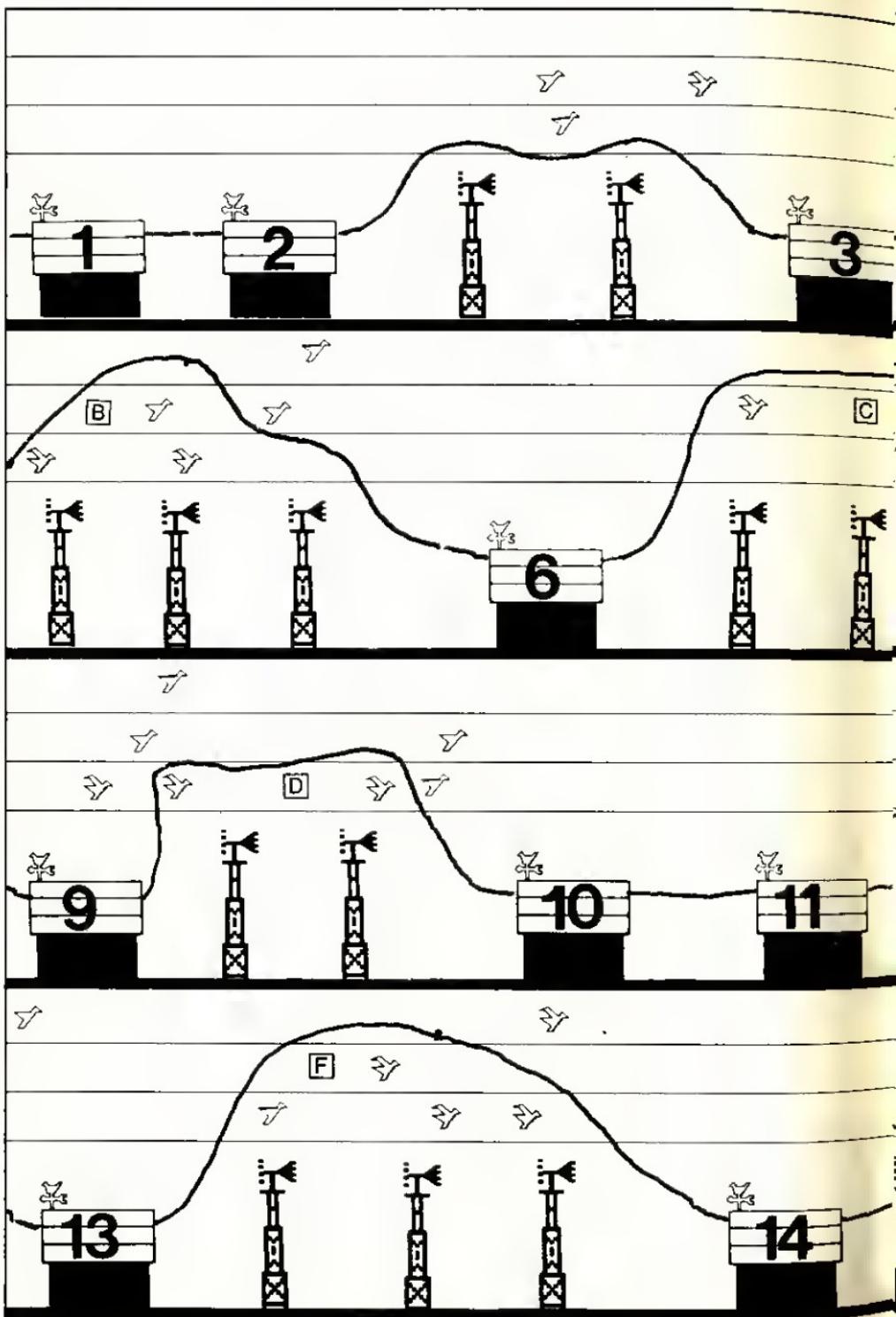
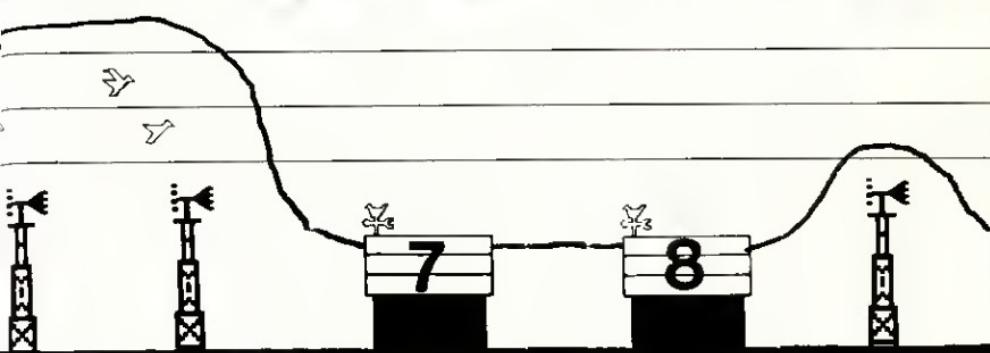
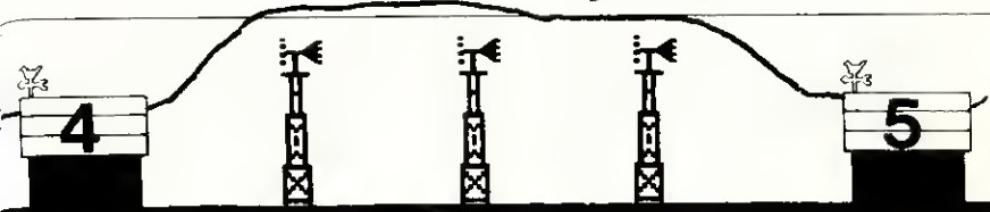
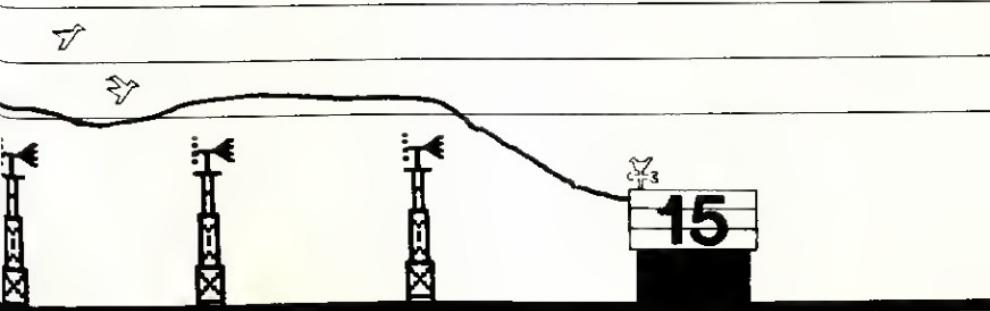
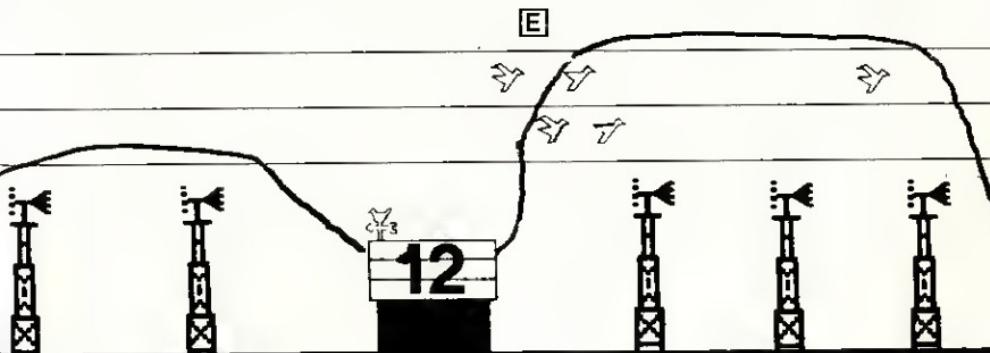


Fig. 21. Solution for Game 3

A ♂



E



after barn 4 or you will hit the goose in row 3.

B In this stretch, just stay in row 3 all the way (no goose problems).

C Fly between the pair of geese as shown. You fly over only one goose in this stretch.

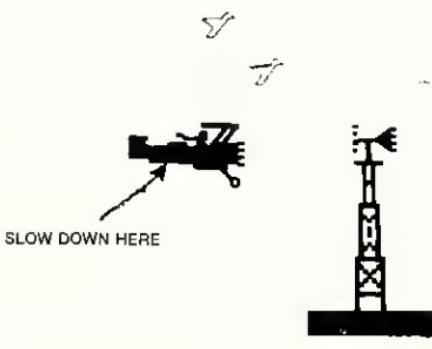
D Rise as fast as you can after barn 8.

E In this stretch, you fly over three geese altogether.

F In this region, you fly in row 2 (over two geese in row 3).

G In this stretch you fly over three geese.

H This is the only place in any solution shown here where you have to slow down. Release the accelerator briefly to let two geese by (one in row 2 and one in row 3). This is a key point in the solution. A detailed picture of this pause point is shown below:



Solution for Game 3

THE SOLUTION, AS WELL AS the entire course, for game 3 of Barnstorming is shown in Figure 21. This is the most difficult of games 1-3 because in it the geese are hardest to avoid. The following notes correspond to the points labeled in the figure.

A There is virtually no room to spare between the geese at this point. Be extremely careful; this segment may take some practice.

B In this region, go over three geese and then back down.

C Stay high (in row 1) over the four windmills.

D Stay in the middle row (row 2) over these two windmills.

E Fitting in between these two geese is perhaps the most difficult move in all three games.

F Fly over a total of four geese in this area.

G To avoid the goose in row 3 here, you must dip below the windmill peaks in the middle of this gap.

Solution for Game 4

YOU'RE ON YOUR OWN!
Since the course for this

game is random, here's your chance to test your reaction time and obstacle-avoiding skills.

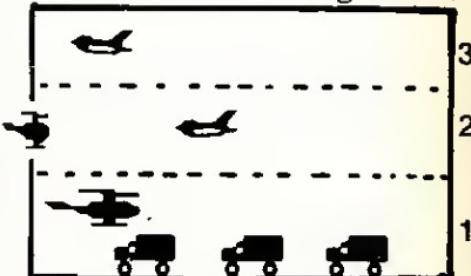
Chopper Command

Descriptive Information

AS THE PLAYER OF THE game Chopper Command, you are the pilot of a helicopter. Your mission is to successfully defend a series of convoy trucks. You must constantly strive to destroy the attacking enemy jets and helicopters as you yourself avoid their fire and prevent the elimination of all your trucks.

The screen shows a side view of your chopper and its environment. The entire territory over which the game is played consists of four adjacent "sectors." Each sector contains three trucks of yours, vulnerable to enemy air-to-surface bombs. Also constrained to move within each sector are three enemy planes. This random mix of enemy choppers and jets usually consists of two jets and one enemy chopper, or one jet and two enemy choppers. You are free to fly in and out of a sector at will, while the trucks

and enemy planes cannot leave their sector. A typical sector is shown in Figure 22.



The sector can be considered to consist of three horizontal bands. There is no actual visible line separating the bands, but each enemy plane roams about only within its band. Initially there is only one enemy plane in each band.

The TV screen, at any instant in time, shows an enlarged picture of an area slightly smaller than one sector. But to enable you to get a rough idea of what your entire territory looks like, it also has a special feature called a "long-range scanner." The scanner is a small rectangular area along the bottom edge of the screen; it is a mini-picture of the entire territory. Each

individual item in the long-range scanner (for example, an enemy jet) is quite small. You can see yourself and every truck and enemy plane in the scanner, but you cannot make out too much detail (especially on smaller-screen TV sets). But this is not a problem. The long-range scanner is intended to give you a general idea of what is off the screen to your left and right. It enables you to plan your next move, and lets you know what is in a sector you are about to enter. The entire Chopper Command screen, including the long-range scanner, is shown in Figure 23.



Your chopper is the dark spot in the long-range scan, and the trucks and enemy planes are represented by light blips. The large-screen picture shows about one fifth of the total Chopper Command world.

In this game you use the

joystick controller. Moving the joystick causes the plane to move in one of the four corresponding directions—up, down, left, or right. When your chopper is moving in one direction, reversing the joystick makes the chopper instantly turn around. Pushing further makes the chopper then move in that new direction. You depress the red button to fire at the enemy, or keep the button held down for continuous fire. (Your fire is slower with the difficulty switch set at A than it is at B.)

You accumulate points as follows: Each enemy helicopter destroyed is worth 100 points; each enemy jet destroyed is worth 200 points; each truck remaining is worth 100 points in round 1, 200 in round 2, and so on.

Initially you are given three choppers. For every 10,000 points tallied you are given an additional chopper. You may accumulate up to a maximum of six choppers in reserve.

Game Action and Bombing

After hitting the game reset switch, no action begins until after you either move your chopper or fire. After you have destroyed the twelve

enemy planes (four sectors having three enemy gunships each), a new wave starts (up to a maximum of ten in any game). Four fresh sectors appear (each having the usual three trucks and three enemy gunships). At the start of each such wave, you must move or fire to begin the action (this is also true following each time that one of your choppers is exterminated). Each new wave increases in intensity—that is, the action gets faster (up to a certain point).

Your chopper gets wiped out by

- Being hit by an enemy bomb
- Coming into contact with an enemy plane...or
- Hitting one of your own trucks

so be on the lookout for all three situations (many beginners have problems avoiding contact with enemy ships).

The enemy planes drop bombs—but neither constantly nor too close together. The bomb released by an enemy in band 1 (the lowest band) usually either drops down (no fancy moves or splitting) or ascends and may split. Of the bombs dropped by enemy in bands 2 and 3, almost all of them are split. This means

that a single bomb leaves the plane and becomes two bombs, one falling down and the other rising upward.

Once in a while the enemy planes in band 3 (the top band) drop bombs that only go upward. In general you should note that bombs are not always predictable; some may descend and then rise again (and vice versa) or split long after leaving a ship. You can get obliterated from either below or above an enemy aircraft.

Enemy bombs do not harm any of the enemy aircraft, and only one enemy bomb (and its descendants) appear on the screen at one time. A new bomb begins immediately when the previous bomb or bombs are no longer visible.

The enemy bombs can destroy your trucks, even if you are not present in that particular sector.

You should be aware of one special situation: Assume that your chopper is destroyed when two enemy ships are in one sector and one is in another. After the hit, you start with a fresh copter (provided you have at least one in reserve). However, when you restart there will be three

enemy ships in one sector and none in the other.

Game Variations

There are four game variations that consist of two skill levels ("Cadet" and "Commander"), each for one or two players.

Helpful Hints

NO PRECISE PATTERNS CAN be drawn for guaranteed solution in Chopper Command, but there are a number of helpful ideas, hints, and general strategies.

Jets Before Choppers

All other considerations being equal, shoot at enemy jets before shooting at enemy choppers. The jets, being faster, can give you more grief later if allowed to remain.

Button Down

Holding the fire button down gives you a continuous, machine-gun stream of bullets. There is no apparent disadvantage to this mode of shooting, as opposed to single-bullet fire. Therefore it is suggested you hold the fire button down always.

Lower Ones First

Lower enemy planes are closer to your trucks and thus represent a bigger threat to the trucks. Therefore all other things being the same, try to demolish the lower planes first.

Trucks Can Be Replaced

Don't worry too much about the loss of some of your trucks, or even of all of your trucks. As long as you have a chopper in the game, the game continues. Thus keep in mind that the chopper is the most important thing; the trucks are of secondary importance since they only affect the number of points you accumulate, not whether or not the game goes on. Think "Chopper first, then trucks."

Shoot as Low as You Like

No matter how low you fly or how low you release your bullets, they will always travel above your trucks. Your bullets cannot destroy your trucks. Therefore don't be concerned about going too low as you shoot or evade enemy fire contact. However, remember that you can *collide* with your trucks.

Flip and Move Quickly

As stated above, if you are traveling one direction and move the joystick in the opposite direction, you immediately face that opposite direction. However, after such a "flip" you stay stationary with respect to the background mountains; the camera shifts and the screen shows your back up against the screen edge. This camera shift causes the illusion that you have moved, but do not be fooled! The important point to remember is that you must move the joystick a second time to be moving in that direction. If you do not move quickly, then you could easily be vulnerable since you are a sitting duck with an enemy potentially sneaking up behind you. Therefore after a flip you should keep your chopper moving (move that joystick again) along, especially if the scanner shows any enemies in the sector behind you.

Let Them Come to You

Flying full speed ahead into a sector can lead to unnecessary risk. If you're flying at high speed toward the enemy and the enemy is flying at high

speed toward you, then the overall effect is as though you're traveling twice as fast. At such a high relative speed, it may be very difficult to dodge enemy planes.

Since the details of a sector you're approaching do not appear on the big screen, the safest strategy is to approach that sector slowly and carefully. This is especially important at the very end of the approach. We suggest flying up near the edge of the new sector, but not rushing head-on into it. If you go toward the sector and hover near its edge, the enemy planes therein will come to you. As they do, you then use your guns and blast them.

If you can determine the precise location just outside their sector and hover there for your offensive strategy, you make it impossible for them to crash into you or wipe out your chopper with their bombs. To hover and remain stationary with respect to the mountains, you will have to execute some back-and-forth flips and dash about.

You Hit What You See

Enemy targets must be visible on the larger screen in order

for you to hit them. It does you no good to fire at distant planes visible only on the long-range scanner.

They Get Closer Each Time

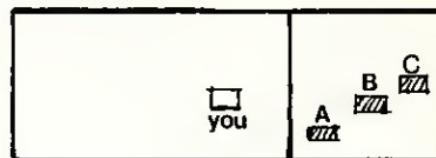
Let's assume that you are using the strategy discussed above (hovering at the edge of the new sector). You get near enough to the new enemy sector and the enemy planes approach. They come toward you, turn around, and go back into the sector; they actually take turns coming out to "greet" you, and then start over again. Each of these sequential waves seems to come closer and closer and closer to you.

If you don't nail them after the first couple of approaches, they'll soon be right on top of you—an extremely dangerous situation. Thus if you don't waste them all in the first couple of approaches, you'd better flip and retreat quickly, flip back again, check the long-range scanner, and plan your next attack.

Farthest Away Greets You First

Let's say that you are approaching a sector containing three enemies, and that the long-range scanner appears as

shown below. The scanner shows enemy plane **A** being closest to you, plane **B** the next closest, and plane **C** the farthest away.



As you approach the sector and they come one at a time to welcome you to their sector, plane **C** (the one that was *farthest* away on the scanner) will come to greet you *first*. Thus a good strategy is: See which plane is *farthest* away on the scanner, match its altitude as you approach the sector, and blast away. Note: Plane **A** may come out a little bit in your direction, but it will retreat before it gets close enough to be a real threat.

Enemies in the Other Sectors Are Stationary

When you are in a particular sector, notice that the enemy jets and choppers in the other sectors appear to be stationary in their formation. They do not perform any hopping or jerking about (although they

may destroy trucks).

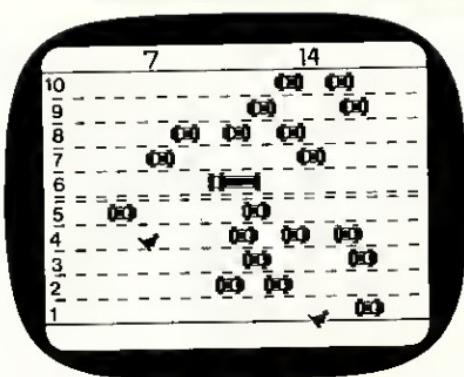
When you exit one sector and approach another, have faith in the long-range scanner's display and know that the positions will not jump about. Check the scanner when you are out of that next sector, plan and get into position for the shot, and then approach with the fire button held down.

A Quick Exit Can Save a Truck

Here's a trick that can be used once in a while when the game environment is just right. It requires quick reactions, but it can be a real life-saver and seem really slick when executed properly. Assume that your chopper, an enemy plane, and a truck of yours are visible on the large screen at the same time. Fur-

ther assume that the enemy has just released a bomb that you can see is headed on a collision course right toward your truck. If you were to very quickly fly away (turning if necessary) into another sector so that the truck (and the bomb) were not visible on the large screen, the bomb will not destroy the truck. In other words, if a bomb on the large screen is on a certain course toward a truck, and they cease to be visible on the large screen before the point of impact, then the bomb does not harm the truck!! In this case, a hit off the large screen is not a hit!! These potential "saves" occur often, and can be happening right under your nose without your knowing it. It helps to be aware of such situations and to be looking for more of them.

Freeway



Descriptive Information

IN FREEWAY, IT IS YOUR task to help the proverbial chicken cross the road—without letting him get turned into a chicken croquette! The Freeway game board is shown above. It consists of a freeway containing ten lanes of heavy traffic. Each lane can have either cars or trucks, and the vehicles go at various speeds. There is a chicken poised on the near side of the road, waiting to be guided across. You control the chicken with your joystick, and your mission is to safely guide as many chickens as possible across the road.

The right joystick controls the chicken on the right; the

left one the chicken on the left. Even in one-player games you have your choice of which chicken to guide. In this chapter we always assume that the difficulty switch on the Atari console is in the B position. In this position, each time the chicken is struck by a vehicle it is moved back one lane, uttering a "chirp" of distress. (In the A position, the chicken is bounced all the way back.)

Each time a chicken successfully crosses the freeway, you are awarded one point. The game lasts for a predetermined length of time, two minutes and sixteen seconds.

Refer again to the Freeway game board. See how the lanes are numbered 1 through

10, going from bottom to top. The traffic in lanes 1 to 5 moves left to right; the traffic in lanes 6 to 10 moves right to left. The speeds of traffic differ from lane to lane and from game to game.

As you (the chicken) cross the road, you may stop in any lane where there is a temporary clearing in order to wait for a clearing in the next lane. Success requires knowing where to stop, how long to wait before proceeding, where to stop next, and so on. The solution for a game consists of a series of "Go," "Stop," and "Wait until..." instructions for each crossing.

The following describes a series of safe crossings for games 1, 3, and 4. We start with game 4 because it has the shortest series of instructions and should be the easiest for you to memorize.

Solution for Game 4 (Left Controller)

THIS SECTION SHOWS A wonderfully simple pattern which, if executed properly, guarantees you crossing after

crossing in game 4. To execute this pattern you use the left controller, controlling the chicken on the left side of the screen.

Crossing 1

For your first crossing of the freeway, follow these steps:

- Wait for one truck to pass above you in lane 1, then go to lane 2 and stop there (in the middle of the lane).
- Let one truck pass above you in lane 3, then go to lane 7 and stop.
- Let one truck pass above you in lane 8, then go to lane 8 and stop.
- Let one truck pass above you in lane 9, then go the rest of the way across.

Crossing 2 and Onward

For the second crossing, the execution is similar to the first crossing; the only difference is that you do not wait for any vehicle in lane 1 to pass. The steps are:

- Go to lane 2 and stop there.
- Let one truck pass above you in lane 3, then go to lane 7 and stop.
- Let one truck pass above you in lane 8, then go to lane 8 and stop.
- Let one truck pass above you

in lane 9, then go the rest of the way across.

For subsequent crossings, you just repeat exactly the same pattern.

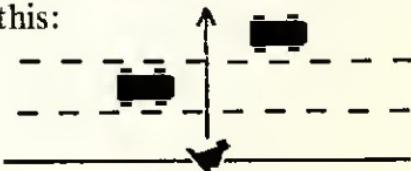
Thus for game 4 with the left controller, you have only two different crossing patterns to remember (and they are extremely similar).

If you get out of synchronization at any time, wait for the truck in lane 3 to pass just above you and then proceed. The rest of the pattern can then be executed as stated above.

though you will not make it.)

Crossing 2 and Onward

- Wait at the start until you can squeeze just behind (after) the truck in lane 2. A diagram of your move would look something like this:



- Go to lane 5 and stop.
- Wait for one truck in lane 6 to pass, then go to lane 6 and stop.
- Wait for one truck in lane 7 to pass, then go to lane 7 and stop.
- Wait for one truck in lane 8 to pass, then go to lane 9 and stop.
- Wait for one truck in lane 10 to pass, then finish the crossing!

Solution for Game 4 (Right Controller)

TO GET THE CHICKEN ON the right across safely, do the following.

Crossing 1

- Go directly to lane 7 and stop.
- Wait for one truck to pass in lane 8.
- Go to lane 9 and stop.
- Wait for one truck to pass, then cross lane 10 just behind that truck. (You will go just ahead of the vehicle in lane 9—it almost looks as

Solution for Game 3 (Right Controller)

GAME 3 IS SUPPOSED TO represent the dreaded Santa Monica Freeway in Los Angeles at 10:00 A.M. The steps below show you how to

cross it successfully for up to twenty-five crossings. For crossing 1, hold the joystick "up" as you hit the reset button to begin the game; this ensures that you begin the game with no delay so that the pattern (steps) given will work properly.

Crossing 1

- Go directly to lane 5 and stop. (*The stop should be in the middle of lane 5.*)
- Wait for the car in lane 6 to pass. (*The car proceeds right to left. Go immediately behind it.*)
- Go to lane 8 and stop (*in the middle of the lane*).
- Wait for one car in lane 9 to pass, then go to lane 9 and stop.
- Wait for the car in lane 10 to pass, then finish crossing.

Crossing 2

- Wait for one car in lane 1 to pass.
- Go to lane 3 and stop. (*You must squeeze between cars 1 and 2. If you have left too early and have bumped into car 1, keep the joystick up and the pattern will still work!*)
- Wait for one car in lane 4 to pass, then go the rest of the

way across. (Again, you squeeze between cars 1 and 2 in lane 4.)

Crossings 3 and 4

- Go continuously all the way across. (*Do not hesitate at the start!*)

Crossing 5

- The same as crossing 2 (wait for a *lane-1* car and a *lane-4* car).

Crossings 6 and 7

- Go continuously all the way across (*do not hesitate at the start*).

Crossing 8

- Wait for the car in lane 1 to pass. (*Go just behind that first car. This is one of the most difficult moves in this pattern.*)
- Go to lane 3 and stop.
- Wait for one car in lane 4 to pass, then go to lane 8 and stop there. (*You must squeeze quickly in between cars 1 and 2 in lane 4.*)
- Wait for one car in lane 9 to pass, then go the rest of the way across.

Crossing 9

- Go directly to lane 6 and stop there.

- Wait for one truck to pass below you in lane 5.
- Go back down to lane 5 and stop there. (*That's right, you actually make one move backward here. As strange as it sounds, this is really a big help in this crossing.*)
- Wait for one car to pass above you in lane 6, then go to lane 8 and stop there.
- Wait for one car to pass above you in lane 9.
- Go to lane 9 and hesitate, if necessary, for the car in lane 10 to safely pass. Then proceed to finish the crossing.

Crossings 10-17

- The same as crossings 2 through 9. (*If you look hard at the traffic pattern you will probably recognize this repetition.*)

Crossings 18-25:

- The same as crossings 2 through 9.

Solution for Game 1 (Right Controller)

THIS SECTION SHOWS YOU how to cross in game 1 when using the right controller. To make sure that you begin the game with no hesitation, hold the joystick "up" as you hit

"reset" to kick the game off. Only then will the rest of the steps given in this pattern work properly.

Crossing 1

- Go directly to lane 6 and stop. (*The stop should be in the middle of lane 6.*)
- For lanes 7, 8, 9, and 10, wait for one vehicle to pass, proceed to the next lane, and stop temporarily. (*Follow behind each car.*)
- Go just behind the car in lane 10. (*Don't wait any longer than necessary.*)

Crossing 2

- Go continuously all the way across. (*Don't hesitate at the start.*)

Crossing 3

- Wait for one car in lane 1 to pass, then go continuously all the way across. (*Go as close behind it as possible without hitting it.*)

Crossing 4

- Go to lane 2 and stop.
- Let one car pass before you cross in each of lanes 3, 4, and 5.
- After the vehicle in lane 5, go continuously all the way across.

Crossing 5

- Go behind the car in lane 2 and proceed directly up after that.

Crossings 6 and 7

- Go continuously all the way across.

Crossing 8

- Go directly to lane 2 and stop.
- Wait for one car to pass above you while you are in lanes 2, 3, 4, and 5. (*Hesitate in lanes 2, 3, 4, and 5.*)
- After the car in lane 6, go directly the rest of the way across.

Crossing 9

- Go directly to lane 8 and stop.
- Wait for the car in lane 9 to pass. (*Hesitate if necessary.*)
- Go directly the rest of the way.

Crossing 10

- Go directly to lane 2 and stop.
- Wait for the car in lane 3 to pass, then go to lane 6 and stop.
- Wait for the car in lane 7 to pass. (*Go immediately after*

the car in lane 7.)

- Go continuously the rest of the way.

Crossings 11 and 12

- Go continuously across the entire freeway. (*Do not hesitate at the start.*)

Crossing 13

- Go to lane 5 and stop.
- Wait for one car in lane 6 to pass, then go to lane 6 and stop.
- Wait for one car in lane 7 to pass, then go to lane 7 and stop.
- Wait for one car in lane 8 to pass, then go continuously the rest of the way.

Crossings 14-16

- Go continuously all the way across. (*Do not hesitate at the start.*)

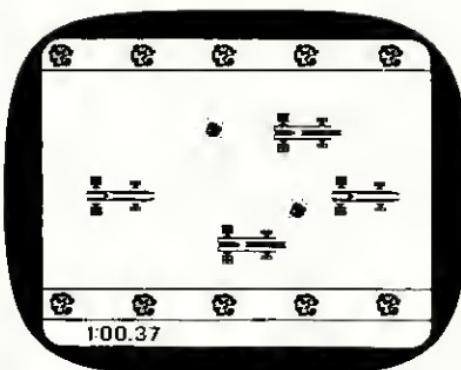
Crossing 17

- Wait for the car in lane 1 to pass, then go directly the entire way across.

Crossings 18-20

- Go continuously all the way across. (*The slightest delay here will cause a setback!*)

Grand Prix



Descriptive Information

GRAND PRIX IS ACTIVISION'S electronic simulation of a world-class auto race. The game has fairly realistic elements regarding atmosphere, car control, and sensation. It features narrow bridges, oil slicks, possible collisions, and a well-designed imitation of steering. You drive over a complete racecourse consisting of up to several miles.

The TV screen sample for Grand Prix is shown above. At any one time only a small fraction of the total race course is displayed on the screen. Your car is the one at the left of the screen. The cars and other elements of the

racetrack move right to left to simulate your left to right movement. (This movement is similar to that in Activision's Barnstorming game.) The two horizontal lines delimit the racetrack itself; the "blotches" outside the track are decorative trees; the dark blotch on the track itself is an oil slick. The elapsed time in minutes, seconds, and hundredths of seconds is also displayed on the screen.

All four of the games on the Grand Prix cartridge are for one player. Your objective is to complete the entire racecourse in the minimum possible time. To do so you must maintain high speeds while avoiding other cars, oil slicks, and the edges of roads and

bridges.

The controller used for Grand Prix is the joystick. Moving the joystick up and down moves your car up and down, making it switch lanes. Your limits of movement are to the edges of the racecourse (not to the edges of the TV screen). The red button is the car's gas pedal or throttle; holding the button down is like stepping on the gas pedal and letting it go is like releasing the gas pedal. The use of brakes to stop the car or slow it down is simulated by releasing the red button and pushing the joystick to the left. The position of the difficulty switch does not affect game play.

about the width of a tire. The other cars travel at various speeds, but each car will remain at its speed for the span of its existence on the screen. In other words, the slow cars maintain their same slow pace, and the fast cars stay at their fast pace.

The Oil Slicks

The oil slicks are the only obstacles besides the other cars on the road surface itself. When your car contacts one of these devilish little black patches, you swerve upward or downward as you continue racing to the right. According to the instruction booklet, contact with these does not slow you down.

The Cars

The computer-controlled cars on the screen always stay in their respective lanes; you don't have to worry about their cutting you off by changing lanes just as you are about to pass them. There are four unmarked but distinct lanes for these other race cars to occupy. If two cars are in adjacent lanes, you will notice that the space between them is only

The Bridges

The bridges are the obvious narrowing of the racetrack road surface. A bridge appears once every mile, but only in games 2, 3, and 4. In the section of road immediately before a bridge, there will be a cluster of oil slicks lying in wait; in that same section of road, other race cars will not

be observed. In other words, leading up to the bridge you have only the oil slicks with which to be concerned. Each bridge is a checkpoint; as you are about to cross the bridge, your elapsed time appears in a frozen display whose numerals do not change until you are off the bridge.

Crashing into a bridge abutment is about the worst thing that you can do in this game; it brings your car to a complete halt, and precious time is consumed bringing the car back up to racing speed.

Helpful Hints

THIS SECTION PRESENTS guidelines that are applicable to all Grand Prix game variations.

The Course Is Fixed

For a given game variation, e.g., game 2, the course is fixed. Each time you play game 2, you run through the same series of events; if you maintain a high speed, all the obstacles (cars, oil slicks, and bridges) appear in the exact same places at the exact same times. If you make the same series of moves, you will en-

counter them at the same times. Thus you should run through each game a few times at first just to get familiar with the course. The first key to mastering a game is knowing its course.

Stay Straight

Each time you steer to move in an up or down direction, your time is increased very slightly. The accumulation of all your up and down movements over the entire course can result in a significant increase in your total elapsed time. If you want to keep your time to a minimum, try to keep your up and down movements to a minimum. Don't make any unnecessary steering moves.

If Uncertain, Don't Be Hurtin'

If you don't know what the next obstacles are or in which lanes they will appear, don't keep laying on the accelerator and charging ahead at top speed. In such a case, a much better strategy is to alternately accelerate and coast, and so on. Repeated pressing and releasing of the red button will keep your car at a relatively fast speed, yet adds more latitude for control. Try alter-

nating rapidly and then doing so more slowly, until you find a rhythm that's comfortable and effective for you.

Crashes Affect All Cars

It doesn't take long to figure out that crashing causes delays for your car. But not only do collisions delay you and add penalty seconds to your elapsed time, they also throw any pattern or scheme off course since the timing of the appearance of all other cars on the screen is affected.

Not Much Room for Error

As noted before, there are four possible lanes on the racecourse road surface. If cars are side by side in two adjacent lanes, you obviously cannot go between them. If two cars are traveling side by side with just one open lane between them it is possible for you to squeeze in and pass them. To do this, however, you need extreme concentration at the passing point. You can fit in between in this case, but there isn't much room for error—there is only enough room on each side to accommodate a tire's width, so be extremely careful!

You Cannot Tailgate to the Finish

To cross the finish line, the game requires that you cross it with a bit of open space in front of you. You cannot finish if you are close behind another car. If you try to do so, the computer will change the course to fool you; it adds an extra section of track before the finish line. You always have to pass that last car and have open space in front of you to actually reach those finish flags.

No Woe from Behind

Since your car really always remains near the left-hand edge of the screen, you can only pass another car as it disappears off the screen behind you. Even if you brake suddenly, you don't have to worry about a rear-end collision because cars never return to the screen from the left. The only trouble in the game is from in front of you (i.e., to your right as you watch the TV screen).

Past the Fast Will Go a "Slow"

Consider the case where there is one of the faster cars in front of you, and you have just passed it. Note that there will usually be a slower car

very soon after that one, and it will be in the same lane. If you have passed the faster one and then swerved into its lane after the pass, you will most likely have some tricky maneuvering coming up very soon. So we suggest after you pass one of the faster cars, do not steer back into the lane where it was.

Each Slick Is Constant

If you are going fast, any given oil slick in a given location of the course will make you skid in the same direction upon contact with it. For example, in game 1, the very first oil slick on the course will make your car swerve upward upon contact. Each slick has its own, constant direction associated with it. Knowing which slick has which direction can be helpful; if hitting a slick is unavoidable, then it can help you plan for your next move since you know which way you will be skidding. (Oil slicks don't affect the computer-controlled cars.)

Just Slicks, You Don't Need Tricks

If you are in an area of track where there are only oil slicks (i.e., no other cars are near),

then you need not bother going through a lot of tricky maneuvers to avoid the slicks. All you really have to do is stay somewhere near the track's center and maintain your speed—a skid is not dangerous if there are no obstacles around.

Turn In, Swerve Less

Consider an oil slick whose associated direction is downward. If you are going straight into it, you will swerve a certain amount downward. If you are above the slick and are turning downward as you approach it, the slick will also make you swerve downward. However, in this second case, the deviation that the oil slick causes to your movement will not be as great as in the case where you were heading straight into it. Turning will minimize the effects of the slick.

Give Us a Brake

The joystick controller can be pulled to the left to cause braking of your vehicle. However, we feel that using the brakes is not a good habit to get into. For one thing, if you are going full speed ahead and realize that you must slam

on the brakes, there is a pretty good chance that you will not be able to slow down completely in time to avoid the obstacle. For another thing, if the brakes were to work in time and you do slow way down, it takes a lot of precious time to build your speed back up to a relatively high level. Try not to rely on your brakes; learn to alternately accelerate and coast instead.

Scrape to Brake

Grand Prix is designed so that you slow down somewhat if you scrape against the edge of the road or of a bridge. This can sometimes be used to your advantage. In the right situation, you may want to intentionally steer slightly into the edge of the road in order to slow down a little. Use this as another alternative to applying the brakes. Try it; you might like it!

Not Too Sharp at High Speeds

At the slower speeds you are able to make sharp, angular precise turns. However, as your speed increases, the car's steering becomes more responsive and tends to move you much more. Turns then

have to be made in a more sweeping fashion, and corners cannot be cut so sharply. Get used to this fact and plan your maneuvers accordingly.

The Solution for Game 1

THIS SECTION REVEALS THE detailed solution for game 1; it shows you the course to follow, the turns and lane-switching to make, and the traffic pattern for the duration of the race. You should hold the throttle (red button) down for the entire race, thus completing the course in the minimum time.

Follow the directions shown in Figure 24. The figure is shown in several segments, which placed end-to-end represent the entire course. Read through the figure from left to right, top to bottom. The traffic pattern and placement of the other cars shown are approximations, but are drawn accurately enough for you to be able to weave through with no misunderstanding. Remember, the racetrack is four lanes wide.

The following notes refer to specially marked positions in the drawing:

A Go straight down to lane 4 (the lowest lane) from the very start of the game.

B After passing the third car in lane 3, make your move upward. Go about halfway up. As you near the car ahead in lane 2, squeeze upward between the cars in lanes 1 and 2. This is a difficult move, so try not to be frustrated by some failing attempts. Once you master

this part, the rest of the pattern should be easy!

C Go upward to lane 2 after you pass the oil slick in lane 2 (this is the second oil slick on the course).

D After that lane 3 vehicle, pull straight down to lane 4. You have soared above five cars during this last stretch in lane 1. Stay in lane 4 for the rest of the game. You are now home free.

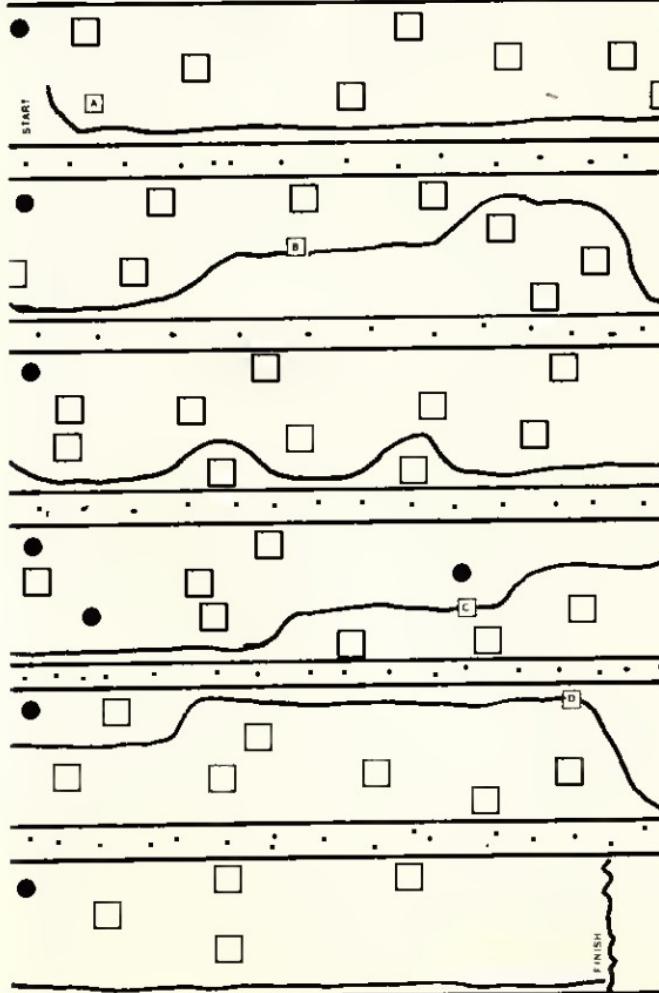
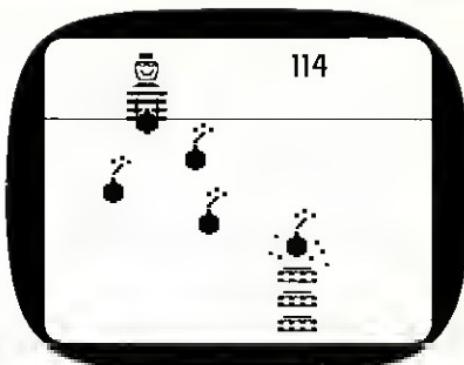


Fig. 24

Kaboom!



KABOOM! IS A FAST-PACED game that pits you against the Mad Bomber. He scoots back and forth across the top of the screen dropping bombs in fairly rapid succession. You have three horizontally stacked buckets in which to catch the bombs and prevent them from blowing up. It's a frantic, fun game, but one that demands precision and finely honed reflexes. The game is played with the paddle controllers. Layout of the screen is shown above.

Descriptive Information

EACH TIME A BOMB EXPLODES, you lose the lowest one of your buckets. When all of your buckets are gone, the

game is over.

The Mad Bomber drops the bombs in sprees. When each spree is over, you must push the red button on your paddle to begin the next bombing spree, or session. We refer to each of these bomb groups as "boards." The end of each board is obvious; the bomber stops and stays inactive until you press the red button. These boards are also predictable in the sense that the number of bombs dropped at each board is predetermined. The number of bombs for each board and the number of points per bomb caught at each board are summarized in Figure 25. Also shown in the figure are your total points accumulated if you have caught

each bomb dropped up through that board's end. For example, if you have caught every bomb up through the end of the fifth board, you will have accumulated a total of 550 points.

The speed with which the bombs fall gets gradually faster as the boards progress. Boards 1 and 2 have bombs which drop at the same speed—the slowest one. Boards 3 and 4 have bombs that drop at the next-fastest speed. At boards 5 and 6 the bombs drop still faster. This pattern continues as shown in the figure.

Another feature that varies as you go to different boards is the manner in which the bombs are dropped. There are

basically two methods:

- The continuous drop—Using this method, the Mad Bomber sweeps from one point to another and drops bombs continuously as he sweeps across. As the bombs fall, they form approximately straight line segments.
- The random drop—Using this method, the Mad Bomber seems to jump back and forth and drops the bombs at random time intervals rather than continuously. The bombs are randomly scattered all over the place without any detectable pattern.

These methods alternate, as can be seen from Figure 25.

Each time your point total crosses a "thousand mark,"

Board	Bombs Dropped	Points per Bomb	Total	Speed*	Method of Dropping
1	10	1	10	A	---
2	20	2	50	A	---
3	30	3	140	B	Random
4	40	4	300	B	Continuous
5	50	5	550	C	Random
6	75	6	1,000	C	Continuous
7	100	7	1,700	D	Random
8	150	8	2900	D	Continuous

*A = slowest, D = fastest

Fig. 25. Features of the Various Boards

you are given a replacement bonus bucket (there can be a maximum of three buckets on the screen at any instant). This means when you get 1,000 points you get a bonus bucket, when you get 2,000 points, when you get 3,000 points, and so on.

The bombs drop straight down, with no left-to-right or right-to-left curve. They may be caught in any of the player's buckets.

Each time you miss a bomb, causing all the bombs on the screen to explode, you return to the *previous* board. This board will be identical to that board the first time it was played, except that it will contain only half as many bombs to be dropped. Thus each time you miss a bomb, the Mad Bomber feels a little bit sorry for you and gives you a "break."

If you then finish that board, you proceed to the next board, the one on which you had originally missed the bomb.

The succeeding boards get more and more difficult. To survive very long at this game, you really must have excellent hand-eye coordination and fast reflexes.

Helpful Hints

THIS SECTION GIVES SOME helpful guidelines for players of the Kaboom! game. While the nature of the game requires skill (born of practice) rather than memorizing patterns to improve your score, you may find these tips useful.

He Starts Where He Left Off

The Mad Bomber starts off each new board exactly where he left off on the previous board. He does not move between boards, nor does he start with a discontinuous "jerk." Thus you should line up directly under him at the beginning of each board. This same concept applies to starting new games. When you have lost all your buckets and the current game is over, the next one will have the bomber start precisely where he left off.

The Near-a-Thousand Drop

Here's a little trick to take advantage of the fact that you get a bonus bucket as you cross each "thousand mark." Just before crossing the thousand mark, drop (miss) a bomb intentionally. This

automatically lets you continue catching bombs halfway through the previous board—which is easier! Since as soon as you catch a couple of bombs and your point total crosses the thousand mark, you get back the bucket that you just lost, the net effect is that you have not lost a bucket due to the intentional miss!! This trick is especially useful if you have three buckets as you near the thousand mark, since the three-bucket-maximum would prevent you from collecting that bonus bucket anyway. (Of course, if you are down to your last bucket this won't work.)

There are a few ways to accurately estimate or judge that you are nearing a thousand mark:

- If you know your point total at the start of a given board and the number of points per bomb on that board, you could calculate how many bombs to catch before the intentional drop.

For example, if you have 1,700 points at the start of board 8 (where bombs are worth eight points each), you should then catch $(2,000 - 1,700) \div 8$ bombs at

most. This works out to be about 37 bombs. You could approximate or actually try to count to 30–35 bombs, and then drop the next intentionally!

- You could try to eyeball the score using peripheral vision.
- You could have a friend watch and advise you when you are getting close.

Watch the Bomber vs. Watch the Bombs

There are two possible strategies for Kaboom!:

- Watch the bombs and move your buckets accordingly.
- Keep your eye on the bomber, and have the buckets follow his exact moves, slightly delayed (of course) so that you arrive under him not when he releases the bomb but as the bomb is completing its descent. Many players like to combine these, watching the bombs for boards 1 through 6, and watching the bomber after that.

Sandbagging Pays Off

As mentioned above, missing a bomb causes you to resume the game halfway through the previous board, which should

be easier for you. Let's assume that you always get nailed (the game ends) on board 5. If you cannot master or complete board 5, here's a way to maximize your game score without completing board 5: Toward the end of board 4, miss the last bomb intentionally. This puts you back to board-3 difficulty, allowing you to rack up easier points—and more of them. Thus you replay half of board 3 and all of board 4, letting you rack up close to 200 extra points. (You should be able to recognize the last bomb of board 4. The continuous-drop method is used there, so when you see a bomb with no bombs above and close after it, that one must be the last bomb.)

This same technique can be applied to any board. If you always get stuck on board 6, for example, miss the last bomb on board 5. This lets you replay half of board 4 and all of board 5, allowing you to collect about 330 extra points.

Remember, as long as you have a bucket to spare, you can use this technique. You can tell when you are near the end of a board by the points accumulated. (See Figure 25.)

Increase Your Bucket Width

Here is a way to effectively increase the width of your buckets. This works only for the low-number boards and when you are currently trying to catch bombs in a particular portion of your screen (i.e., not the entire screen.) Move your controller (and thus your bucket) back and forth as fast as you can, so that the total movement of the bucket is only over the narrow part of the screen where bombs are getting low. If your back-and-forth speed is great enough relative to the drop speed of the bombs, you have effectively widened your buckets. This activity makes it unnecessary for your movements to track the actual points at which the bombs are dropped; you need be in only the approximate area where the bombs fall.

React to the Bomb Pattern

Some players like to visualize



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and react to the entire pattern of bombs on the screen at any instant. Such entire-image-retention makes it unnecessary for you to focus on any individual bombs. For example, see Figure 26.

To react to this pattern, you know you will have to move a bit left, then a bit right, and then sweep to the left for quite a ways. Thus you react to a screen at a time, rather than a bomb at a time. Try it!

MegaMania

HAVE YOU EVER AWOKEN IN the middle of the night, drenched in sweat, trembling, with some faint recollection of a wild and jumbled blend of curious yet somewhat familiar objects? If so, then perhaps you've already encountered MegaMania, a space nightmare by Activision. It's a fast-moving, action-filled game where the screen's appearance is not unlike some kind of wild nightmare resulting from overeating.

Descriptive Information

THE GAME CONSISTS OF UNENDING waves of various objects, each wave having specific motion dynamics associated with it. The objects are quite unfriendly and continually belt you with deadly projectiles as they float across the screen; in addition, most of them move downward in a fiendish attempt to destroy you on contact. You are constrained to move your "mobile blaster" along the ground

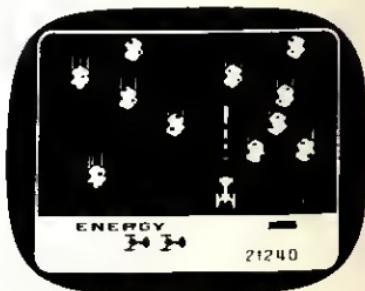
level. Your game life is extinguished in any of three ways:

- (1) You are hit by an enemy projectile
- (2) You make contact with an enemy object itself
- (3) You fail to destroy the entire fleet of enemies in a wave during the assigned time limit

You do not get wiped out if the foes land at ground level; they recycle back to the top.

The time limit is fixed for all waves. Time is measured and displayed for your convenience in the form of the "energy reserve bar"; when it shrinks to nothing, you've had it!

The screen for Megamania is shown below. It shows the



action for a particular point in time during wave number 8. The enemy objects for this wave are "space dice."

You can move left and right along the screen's bottom to avoid enemy fire and collisions with objects. You must also fire back at them, and some games even feature "guided missiles" like those found in Atari's Combat game. Your supply of ammunition is endless, but you may only have one missile on the screen at any one time. Fortunately the enemy missiles always fall straight down, allowing you to figure out some kind of consistent strategy for dodging those projectiles.

If you achieve temporary success by destroying all of the unneighborly articles in one wave, you get a brief break in the action. Then you are startled by a bizarre new wave whose elements are usually even more difficult to handle. The nightmare keeps getting worse and worse. You can easily distinguish the various waves; each is identified by a specific shape, color, and kind of motion. The objects have vaguely familiar shapes, resembling strangely colored

hamburgers, cookies, bugs, tires, and so on.

You use the joystick controller in MegaMania, moving it left and right to slide yourself horizontally along the bottom of the screen. (You cannot move up or down.) You press the red button to fire at the enemy shapes. In some game variations you can guide your missiles by moving yourself left or right during the flight of your projectile.

You have three "lives" to begin the game. For each 10,000 points accumulated you acquire another extra life, but a maximum of only six extra lives can be held in storage.

After you have been destroyed, your energy (time) supply starts over with its full 79 units. You return to the wave where you left off; the remaining objects start over in their beginning formation, but the ones you've already eliminated stay eliminated.

The speeds of the flying aggressors vary during the game, and often even during a particular wave. On some waves, they start off slow, pause, then go fast, then return to a medium speed. Their medium speed is approximately as fast as you are

able to travel.

There are four possible game variations on the MegaMania cartridge, featuring guided or straight missiles for one or two players.

You get points for each and every enemy nailed. In wave 1 the objects are worth twenty points each. At each subsequent wave, up to wave 8, the points per object increase by ten. From wave 8 onward, the objects are worth a flat ninety points each.

To help you get started, Figure 27, "MegaMania Wave Characteristics," shows the arrangement and motion of objects for each of the first eight waves.

The following notes provide additional information that you may find helpful:

- Each wave consists of either fifteen or eighteen flying foes. The eight different types of objects keep repeating in sequence: Every eighth wave after wave 1 repeats the "hamburgers"; every eighth wave after wave 2 repeats the "cookies;" and so on.
- The wave 1 objects, hamburgers, do not descend to threaten you. They only

move left to right and drop bombs.

- The wave 2 cookies come in six slightly staggered groups of three. They zigzag and descend upon you. Only five out of the six groups are visible in their entirety at one time.

- The diamonds and the bow ties spin around as they move, each presenting a target whose width constantly varies from full size to next to nothing. They're not easy to hit!

- The dice are the only objects that don't shoot at you; this is no real blessing, however, since they are hard as anything to shoot at and duck simultaneously.

- From wave 9 onward, many of the waves' objects start off at a slow pace, then stop, then go at a very fast pace, and then finish off the wave at a medium speed.

All in all, MegaMania presents a real challenge, requiring speed, accuracy, coordination, and complete concentration on the part of the player. You cannot relax, even for a second, as the assertive invaders fill the skies and demand your utmost attention. The novice player will prob-

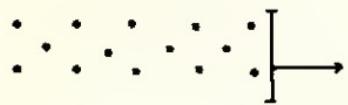
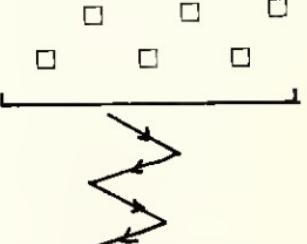
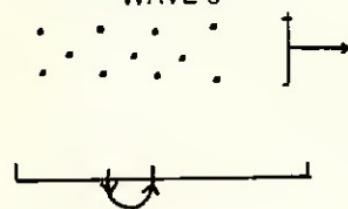
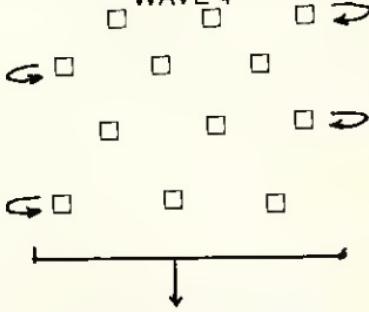
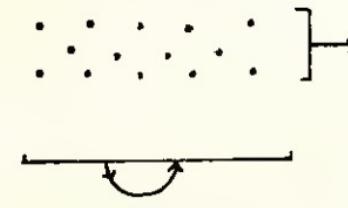
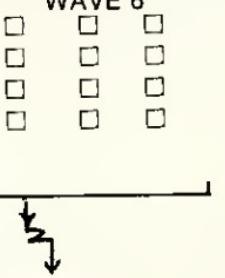
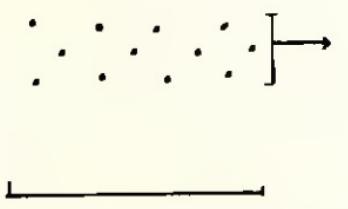
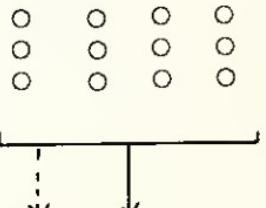
<p>WAVE 1</p>  <p>Fifteen (pink) HAMBURGERS</p>	<p>WAVE 2</p>  <p>Eighteen (gold) COOKIES</p>
<p>WAVE 3</p>  <p>Fifteen (green) BUGS</p>	<p>WAVE 4</p>  <p>Eighteen (violet) TIRES</p>
<p>WAVE 5</p>  <p>Fifteen (green) DIAMONDS</p>	<p>WAVE 6</p>  <p>Eighteen (yellow) STEAM IRONS</p>
<p>WAVE 7</p>  <p>Fifteen (pink) BOW TIES</p>	<p>WAVE 8</p>  <p>Eighteen (orange) SPACE DICE</p>

Fig. 27. MegaMania Wave Characteristics

ably get through the first waves, but can soon become frustrated as the game progresses. The experienced and sophisticated player will find plenty of ongoing challenge from the pace and difficulty of the later waves. You will not be bored!

Helpful Hints

MEGLAMANIA IS A HIGHLY intense game that demands significant skill, dexterity, and hand-eye coordination. But we think the following facts and guidelines may help you conquer this cosmic nightmare.

Make It Count

As in other games where you can have at most one missile on the screen at one time, you must wait for each errant shot to leave the screen before emitting another shot. Thus it is essential that you make every shot count (only in the hamburger wave do you have some room for error). As a general rule, do not release a missile unless you have a definite target in mind and a pretty fair chance of hitting it.

Don't Get Cornered

You can move across only about 90 percent of the full screen width. Keep the limits fixed in your mind. If you forget, it is easy to get yourself cornered, thinking that you have room at the side when in fact you don't. Don't go too near the corners if you can help it; if you do go, don't stay long.

Two Missiles Can Cancel Out

There is a chance that you can hit a dropping enemy missile with your missile. This does not happen very often, but when it does, the two opposing missiles actually cancel each other out; neither bomb can subsequently damage either yourself or the flying foe. We recommend *dodging* enemy bullets as the best approach, but some experienced players might want to try this trick once in a while.

Start Out Straight

The straight-missile games are conceptually simpler. Also, you sometimes steer the guided missiles when you don't intend to (i.e., when you are anticipating your next position while the missile is still in flight). For these reasons

many players will find it more comfortable to get familiar with MegaMania on game 3, the one-player, straight-missile game—although some players will find it harder because game 3 does not give you repeated fire when you keep the red button pressed down.

You've Got to Know Their Patterns

The only way to really succeed at this game is to know by heart the flight patterns of the various waves' objects. Since they bounce around so much and at such fast speeds at times, you can only prevail over them if you are able to anticipate their movements and shoot accordingly.

A good way to learn a particular pattern is by going through as much of a wave as you can *without* shooting at the objects: Simply dodge their missiles and observe the movements of the group as a whole and of its individual components.

What's Next

As you near the end of a wave and are finishing off its remaining survivors, think about which wave will be next

to appear. Remind yourself of the formation and the movements of the upcoming new group. If you are mentally prepared, you can get off to a good start. Nailing those first few objects is a very important key to successfully completing a wave. Also, in many waves, nailing the first few invaders creates a hole in the formation in which you can hide from the steady shower of deadly missiles.

Go for Those Extra Points

If you end a wave in less than the allotted time limit, you are awarded bonus points proportional to the time remaining. The quicker you finish a wave, the more bonus points you receive. Thus if you can finish a wave safely, there is still the extra challenge of finishing it as soon as physically possible. Don't waste time if you're out to maximize your game score!

Let Them Go into It

When playing the MegaMania games featuring straight missiles, try to shoot out in front of the objects and let their natural formation movement lead them right into your missile. If you know the for-

mation movement and its speed, practice will help you determine the exact amount by which you have to lead them. Also, in the zigzag-movement waves, try to shoot right after a turn so that you catch the objects on the straightaway portion of their flight.

A Novel Idea for Practice

Using guided missiles effectively is a skill that many beginning players have trouble developing and perfecting. During the guided-missile MegaMania games, the pace is so hectic that you naturally have some trouble learning and practicing the act of guiding the missiles. We suggest going to Atari's Combat cartridge and practicing a guided missile game there *without* an opponent. The controls and the way you guide missiles are similar for both games. In the Combat game with no opponent, you have lots of time and a perfect environment in which to practice and get used to control actions for guiding missiles. You don't have to be concerned about enemies crashing into you or being hit by foreign missiles; you can focus and

concentrate entirely on the act of guiding missiles. After you get the knack, then go and try the skills at the MegaMania game.

Keep Your Cool

The speed, movement, and sheer numbers of enemy objects can really assault your senses. You've got to try your hardest to stay calm and collected. Sure, you'll get blown away at times, but keep your concentration and don't let their speed intimidate you.

A Shrewd Scheme

Here's a clever little plan that makes use of these two facts:

- When you get wiped out, you start afresh with a full wave of energy.
- If you have six lives in reserve and cross a 10,000-point mark, you do not get an extra bonus life. If you already have six lives stored up and are getting near a multiple of 10,000 points, then it could be to your benefit to "throw the game" to take advantage of the rules of MegaMania. If as you near the end of a wave you have still not crossed that 10,000 multiple, abuse all the objects in that wave except for the last

couple. Then commit electronic hara-kiri and just let them destroy you. This starts you off with a new wave of energy. Then finish them off quickly. This way you get nearly the full bonus for the wave because the energy bar is almost full, instead of getting few bonus points because of a short energy bar. Also, you get your intentionally sacrificed life back very soon anyway, as you cross that neighboring 10,000 mark. You actually end up better off letting yourself get annihilated.

Guess and Get Lucky

Consider the objects that move downward toward you. If any of these objects reach screen bottom without hitting you or getting blown up, they go off the bottom edge of the screen, are invisible for a brief period, and then reappear at the top edge of the screen. After one has just gone through the bottom, if you don't have much traffic on the screen and can thus spare a shot or two, try this: Take a guess at where it will reappear on the top edge and take a shot there while it's still not quite there. By the time the shot gets there it may have just

arrived on the scene. And if you've guessed right, your missile will welcome it with a bang. Even if you've guessed wrong and missed, your missile is just about off the screen anyway, and you can resume shooting immediately.

The next series of helpful hints all apply to individual waves.

Hamburger Helper

The "hamburgers" (waves 1, 9, 17, and so on) do not descend toward you, so you do not have to worry about their colliding with you. The group as a whole can have a maximum of two shots on the screen at one time; however, any one column (one or two hamburgers tall) can have only one shot in progress at a time. If you nail the single-hamburger columns first, then the remaining ones will be spread out with no two columns next to each other. And since no column can fire more than one shot at a time, any shots the remaining group fires will be quite spread out and easy to dodge. The arrangement after this first step would look like this (O = hamburger, still alive; X = dead hamburger):

O	O	O	O	O
X	X	X	X	
O	O	O	O	O

With the single-hamburger columns eliminated, you are left with a large number of gaps in which you are temporarily safe.

Another strategy is to sizzle all of the lower hamburgers in the two-hamburger columns. The arrangement of the remaining hamburgers would look as follows:

O	O	O	O	O
O	O	O	O	
X	X	X	X	X

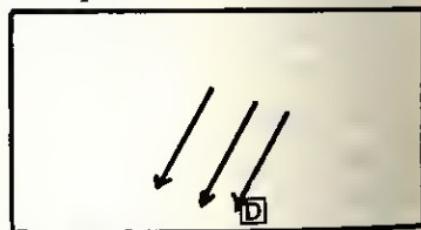
This pattern would give you more time to react to the missiles of the survivors, which is especially important in the later waves. You might want to consider a hybrid strategy with the first arrangement as the goal in early waves and the second pattern as the goal in later waves.

Crumble Those Cookies

On the waves numbered 2, 10, 18, etc., the airborne objects are cookies. They move toward the bottom of the screen. Beware: Their touch is deadly! Get the lowest rows

first, before they get you. Destroy each group (row) as it appears on the screen. Don't get behind on this plan, and you should have success on the cookie waves.

On later waves with cookies (waves 18 and 26, for example), the groups descend in alternating patterns: first diagonally downward to the left, and then diagonally downward to the right. In the diagram below, don't get caught at the dangerous point **D** when the action is about to switch from a downward-left motion to a downward-right motion. If this occurs, you will be scissored into shreds at that point.



Get the Bugs Out

Waves 3, 11, 19, etc., contain strange little creatures, "bugs." Their formation is similar to that of the hamburgers, but they move downward. One method that works on them is to shoot yourself a little opening in which to hide when they get too low. From that fox-hole you can proceed to nail

the others, making your nest of safety larger.

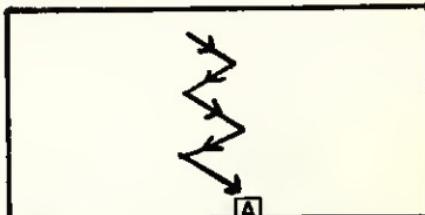
Don't Get Tired

The objects in waves 4, 12, 20, etc., look like spinning tires. Their formation consists of six different groups of three each. Groups 1, 3, and 5 move opposite to groups 2, 4, and 6, resulting in a very confusing-looking flight pattern which may take some exposure to get familiar with. Since the tires take steps down to approach you, you could just let them come to you. But one method we like is to puncture one or two (not all three) in each group. This helps make little holes in the pattern in which you can hide when the tires get too low. Warning: The tires also have a tendency to crisscross and trap you when they get near.

To deflate the individual tires, scissor back and forth quickly with them; curve your missiles into them if you are engaged in the guided-missiles game variation.

Another strategy which can work well is to stay at the rightmost-edge point of their weaving pattern, at ambush

point **A** below. From that position, shoot them just as they reach that rightmost point in their flight, just before the bottom of the screen.



Polish Off Those Diamonds

The "diamonds" in waves 5, 13, 21, etc., take on a formation similar to those of the hamburgers and bugs. As they move downward, they are tough little targets due to their spinning motion. You should try to wipe out the lowest diamonds first, in order to give yourself more room in which to maneuver. You should be aware that the lowest diamonds can shoot two missiles at a time, whereas the mid-level and top-level diamonds can shoot only one at a time.

Steam Those Irons

In waves 6, 14, 22, etc., the flying objects are household irons. Their formation consists of six groups of three. They zigzag, stop, then zigzag again, and can be really

tricky. As they sweep toward the screen bottom they can flatten you if you're not careful. We suggest burning up each fresh group of irons as it appears. Make sure that you quickly destroy at least one iron from each descending column — this guarantees that you will have space to duck into later.

Good-bye, Bow Tie

Waves 7, 15, 23, etc., contain rather unusual bow ties, that spin as they move in W-shaped flight patterns across the screen, and are elusive competitors. We think that the best approach here is to stay in one place and wait, releasing missiles from your chosen position at the appropriate times. Note that the mid- and low-level bow ties can shoot two missiles at a

time, whereas the top bow ties are limited to one at a time. Popping either the lowest bow ties or the single-tie columns first both seem to work fairly well.

Advice on Dice

Waves 8, 16, 24, etc., feature congregations of eighteen "space dice" moving in a strange, downward pattern of flight. They almost appear to be arranged in columns at times, but some randomness makes the pattern hard to figure out. For wave 8 we suggest staying under one vertical area ("column") at a time, wiping out the dice in it with rapid fire as they come to you.

For waves 16 and 32, try to nail at least one in each group of three in order to give yourself space in which to hide.

Pitfall!

PITFALL! IS A UNIQUE AND intriguing new home video game cartridge. The animation dynamics alone are enough to distinguish it and place it above most of the ever-growing multitude of cartridges competing for the Atari owner's attention (and money).

Descriptive Information

PITFALL! REMOVES THE player from twentieth-century technology and transports him or her deep into the heart of a dangerous jungle. You are faced with the treachery of a two-level jungle atmosphere, where in a frantic race against time you try to accumulate the pieces of a hidden treasure. The game is fashioned, in a sense, in the Adventure mold, but features outstanding audio-visual effects—including a digital simulation of a Tarzan yell when Harry swings from one of the many vines.

You direct Pitfall Harry in

his search for the secret riches, and you are confronted with a variety of dangers which include:

- Rolling logs
- Blazing fires
- Snakes
- Tar pits
- Quicksand
- Subterranean scorpions
- Crocodile-infested swamps
- Holes that plummet you into underground passageways
- Brick walls which block your progress

The underground passages give Pitfall Harry the opportunity to take advantage of shortcuts in his race to beat the clock, but they hold some dangers not found on the primary level of the jungle. Getting in and out of the underground requires some skill to be done properly, without undue loss of time or points.

Coordination, quickness, and strategic decisions are your key to success in avoiding obstacles, gathering

treasures, and mastering Pitfall Harry's jungle adventure. The crocodile pits are especially interesting, and there are a number of ways to succeed or fail around them. You are given three lives at the start of the game and cannot accumulate any additional ones. When your third life is extinguished, or when the twenty-minute time limit runs out, the game is over and your final point total is displayed. Points are awarded for the various gold and silver bars, diamond rings, and money bags which you have collected (by contacting them) as you scurry through the tropical maze; points are deducted when you run into logs or fall down holes.

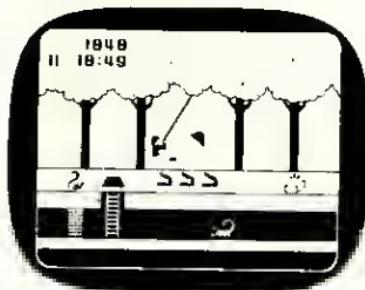
The game is fairly easy to understand; even beginners at home video games can quickly grasp the basics. You can take some time to think if you want; of course your point total and game time will reflect that. You are not forced into constant maneuvering as in some games. Yet Pitfall! can present a challenge for intermediate and advanced players, since time and point-total optimization are always possible.

The joystick controller is used to guide Pitfall Harry. Moving the stick left or right makes Harry go left or right. Pressing the red button makes Harry leap into the air. Pushing the stick up makes Pitfall Harry go up stairs. Pushing it down can make him go down stairs or can make him let go of the swinging vine at any point during its travel. No special use of the control stick or button is necessary to pick up treasure pieces; just maneuver Harry so he touches the riches.

When Harry loses his life to one of the many dangers, he always reappears at the left side of the screen (if he has a life remaining) to continue his jungle adventure. If he was wasted on the main jungle surface (or falling from it), he reappears on that surface. If he was eliminated underground, he reappears underground.

The screen shows only one small part of the jungle at any instant. Harry can leave the current screen only by the right or left side. When he leaves one scene, he is automatically shown entering the opposite (contiguous) edge of the next scene. He con-

tinues going horizontally from scene to scene. A typical jungle scene from Pitfall! is shown below.



Helpful Hints and Information

EACH OF THE HINTS IN THIS section can be applied at numerous times and places during the game adventure. Included are facts and beneficial information concerning each of the dangers, Harry's methods of travel, evasive action, and some general Pitfall! strategy.

Left or Right

At the start of the game, Harry is positioned at the left side of the first scene, and is facing to the right. It is almost as though Activision wants you to proceed left-to-right in order to travel through the jungle. However, we have

found it more helpful to go continually right-to-left through the jungle: Simply turn Harry around and go. The reasons for our preference to move toward the left include:

- You can avoid having to leap over many rolling logs this way, since they always roll right-to-left. If you go left, they will never be rolling right at you.
- Whenever you lose a life to one of the fatal obstacles, you are always reincarnated on the left of that scene. Thus if you are going right-to-left, you are actually placed past the trouble spot. If you were going left-to-right on the other hand, after losing the life you would still have to struggle with that same danger all over again, risking yet another life.

The Logs

There are both moving and stationary logs in the jungle. The moving logs are constantly rolling, and they always roll in the right-to-left direction. You have to jump (via the red button) to successfully negotiate the logs. If a log contacts you, you not only lose precious time in the slow-

down effect, you also have points deducted from your game total. Thus those logs are double trouble.

When a log contacts you, you lose a variable number of points. The actual number of points deducted seems to depend on how long you are in contact with the log. If you stay in continuous contact, you can watch your point total keep on decreasing. Thus whenever you do have the misfortune to go into a log, get away from it as fast as possible! It could mean the difference between losing a few points and losing many points.

One other useful observation about the rolling logs: A given log never continues from one scene to the next. Thus if you avoid a log and leave the screen, you need not be concerned about meeting that same log or having it catch up to you on the next scene. There will be other dangers there, however, so don't relax too much.

Jump to Your Heart's Content

To have Pitfall Harry jump into the air, you must depress the red button on the joystick controller. You do not have to

hold the button down; just a quick press-and-let-go action will do nicely. Holding the button down longer does not make Harry jump any higher. And when you execute the jump, you may also be moving to the left or right, thus performing the Pitfall Harry Running Jump.

Note that jumping while you run does not slow you down or hurt you. You can jump as much as you want, just for the sheer pleasure of it!

The Log-Jump Event

Sometimes rolling logs appear in pairs in the jungle. Some pairs are fairly close together, and some are very far apart. Whether or not you get a running start and are going at full speed, you still can leap completely over the closer pairs of logs. You don't have to jump over one, land, and then jump over the other. Try it!

Don't Get Shafted

You will come across open stairways and also wider, plain open holes. If you run or stumble into one of the latter, you fall through a shaft into the underground passage-way. You can get across the

holes with a running jump or jumping from a standstill. Going at top speed you can negotiate a hole and still have a little room to spare. You need never fall through that shaft into the underground if you just make sure that you don't begin the leap until you are quite close to the actual hole.

If You Have a Lead, Go Full Speed

Let's assume that you are going right-to-left through the jungle, as we suggested earlier. If you have a log rolling at you from behind and you have any lead on it, then you will outrun it as long as you continue to proceed at full speed. If you stop, even momentarily, or perform some action like a stationary jump, then the log has a chance to catch you. Keep going, and remember: Once you outrun that log on the current scene, it cannot follow you into the next scene (though be careful you don't rush right into a fire or a serpent there).

Get Down

In our experimentation with the Pitfall! game, we have found at least two ways to

travel down stairs properly. By climbing down "properly" we mean getting down without losing points. If you fall down the stairs, points are immediately deducted from your game total; if you see Harry's arms and legs moving as he walks down, then he has gone down the right way and has not lost any points. Here are two ways to get down without penalty:

- If you are walking/running right-to-left, hold the joystick diagonally down and to the left as you enter the stairway (the joystick should point southwest). It is easiest to accomplish this if you start pulling the stick toward you before you reach the opening.

- Jump onto the stairway opening and pull the joystick suddenly down as you are over the approximate center of the opening.

Serpents and Blazes

Contact with either a snake or a fire costs you a life; and since you only have three lives, you cannot afford to get too careless around these rascals. The way you get around them is by the running jump, taking care not to

begin the jump until you are fairly close to the obstacle. If you begin the jump too soon, then you could land on top of it or it could nip or graze your leg while you're on the way down. Even the slightest contact is enough to cost you your life.

It's the Pits

The dark, swamplike patches on the jungle's main level are tar pits; the similar patches of a lighter shade are quicksand. Occasionally both the tar pits and the quicksand display what we call "retraction action"—they expand to full size and then retract toward their centers and vanish. When they have retracted all the way and are invisible, you may safely travel over the ground they used to occupy. When they are visible, they are deadly and can trap you.

Some of these have swinging vines over them that may provide you with safe passage. Others have no vines above, and you must patiently wait until the tar pit or quicksand has retracted. The fundamental approach is to walk/run up to the edge, and as it retracts start to go across. You could start a bit early if you leap as

you begin to cross, but it is safest to go across when it has completely vanished. You have time to cross such an obstacle, provided you don't hesitate. What we recommend is that you execute a running jump over the *final* part of the patch. This is a precautionary measure that would be a lifesaver if you had delayed a bit at the start or gone slower than you should have. Always jump at the end to play safe. To know the best spot to begin a jump, we like to check out the jungle background. Find a spot near a background tree (or between trees) that is about 80 percent of the way across. Focus on that spot. When the patch retracts and you are running across it, begin your home-stretch jump at the spot that you have approximated.

Be a Swinger

There are several places in Pitfall! where swinging vines are available to assist you over various trouble spots, such as crocodile swamps. The vines are in constant back-and-forth motion, swinging to and from both ends of the trouble spots like a pendulum.

To grab the vine: Go as

close to the trouble spot as you can without putting yourself in immediate danger. When the vine is just completing its swing toward you, simultaneously press the red button and push the joystick in the direction toward the vine; this makes you leap up and toward the vine. Contact with the vine attaches you to it. You now hear a wild, digitally simulated Tarzan yell as you swing on the vine over troubled waters.

You can also grab onto a vine while running full speed toward it, provided that the vine is swinging toward you at just the right time. One precautionary note: If the vine has started swinging away from you, don't try for it; you'll probably lose the leap and the swamp will swallow you up.

To let go of the vine: When the vine has swung to the far side of the hazard and is at its "motionless" point there just prior to beginning its swing back, pull the joystick controller back toward yourself. This lets you release the vine and land just beyond the trouble spot. Immediately push the joystick in the direction you were traveling and pro-

ceed hustling through the jungle.

Actually, letting go of the vine just a wee bit early or late also works. In fact, sometimes you may want to intentionally do so to avoid a rolling log. You could delay just a fraction of a second to let the log go by, and then release the vine and still make it to safety.

Don't Get a False Sense of Security

Enough exposure to the Pitfall! game should show you that each and every scene in the jungle adventure has at least one danger within it. Thus if you enter what appears to be a screen without any hazard, beware! If the screen looks clean, you can be sure it contains one of those tar pits or quicksand patches with retraction action. Proceed a little way onto such a screen, but be ready for a pit to roll out an unfriendly welcome!

A Hitch on the Vine Saves Nine

Vines swing over some of the quicksand pits with retraction action. As you approach the trouble area, if the quicksand has just disappeared, then you may continue running and get

right through the problem area. If you approach the pit as the hazard just disappears and the vine happens to be swinging right over to your side of the pit, then you have a choice. Either the vine or your legs can carry you safely past the trouble.

Which should you choose?

Our answer is to choose the vine if the timing is right. Use of the vine seems a bit faster than taking all those separate little steps to cover the same distance. If you do this at several points in the obstacle course, the time you save can be significant.

The Ladder to Success

Throughout the jungle you encounter several places where you have a choice of whether or not to make use of the underground passages. Experimentation with Pitfall! will show you that going down, traveling through a couple of underground scenes, and coming back up can be equivalent to travel across several above-ground scenes. This can really save time getting to and from certain points in the jungle. However, use the underground wisely and don't overdo it because:

- You may miss scenes which contain treasures, therefore causing your point total to be deflated, or
- If you're not familiar with the local geography, you may run into a dead end in the form of a brick wall. This will force you to double back, wasting a lot of time while you accomplish no useful purpose (except perhaps to have some fun exploring).

The Lowly Scorpion

Deadly scorpions pace back and forth in the underground passages beneath the hot and humid jungle floor. Fortunately they appear in only some of the underground scenes. You have to avoid contact with a scorpion by jumping over him—but be careful not to jump too soon! You don't have much room for error in the leap over this despicable creature. Jump into the air just before you touch him.

A scorpion will be in the middle of his scene when you just enter. From then on he will always go toward you. Even as you leap in the air over him, he turns and keeps following you, right up to

your exit. If you leave the scene with him on your tail and then quickly turn around and reenter, he will again start back in the middle of the scene; thus you need not fear immediate contact with him if you decide to reenter that scene.

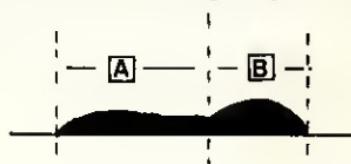
Another interesting observation: If you're on the upper surface in a scene that has water, quicksand, or a tar pit, and he's below where he belongs, he will still follow your horizontal position. He'll go left if you're to his left and right if you're to his right. He'll continue this futile effort, even though he cannot harm you from there—it's as if he's waiting for you to fall through to his level.

Crocodile Swamps

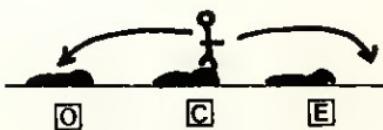
One of the most treacherous areas in the jungle is the dreaded crocodile swamp. Some of the crocodile swamps have swinging vines above them so that crossing is easy; you just follow the instructions given above under "Be a Swinger." But the crocodile swamps without vines present a more difficult problem, which we will now discuss.

The crocodiles are constant-

ly opening and closing their mouths. You can safely rest anywhere atop a crocodile while his mouth is closed. When the mouth opens, however, the only safe spot is the part of the head well away from the jaws. See the figure below. Region **A** is deadly when the mouth is open; region **B** is always safe. You can go to spot **B** and rest there for as long as you want.



Crossing the crocodile swamps going left-to-right is different from crossing them right-to-left. Consider Pitfall Harry resting atop the center crocodile at point **C** below. When their mouths are closed, he can jump in either direction; but notice the difference. If Harry leaps to the



left toward crocodile **D**, it takes a pretty good-sized jump to get to that crocodile but there is an advantage: It is impossible for him to leap too far and go past crocodile **D** into the deadly swamp to the left. If Harry leaps to the right toward crocodile **E**, it only takes a small jump to get there but there is a disadvantage: It is possible for him to leap too far and end up in the swamp to the right of the crocodile. This is another reason why we generally prefer going right-to-left through the entire jungle course.

- (1) Get up close to the swamp and leap to the head of the crocodile at point **I**. Wait there until the mouths close.
- (2) When the mouths have just closed, leap quickly onto crocodile **H** and immediately jump again onto the safe spot atop the head of crocodile **G**. Pause there.
- (3) When the mouths next close, quickly run a bit forward along the closed mouth of crocodile **G** (about to point **F**) and begin your running leap to safety from that point.

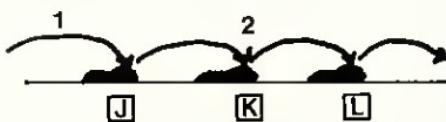
Some hotdogging players may want to try to combine our steps 2 and 3, completing the entire transition without waiting for the mouths to open and close that last time. It can be done, but it takes skill and practice.

The complete right-to-right cross: When you are going to the right through the jungle, you can use this two-step approach for crossing the crocodile swamp. Refer to the next drawing for this.

- (1) Get up close to the left edge of the swamp. When the mouths have closed, jump onto the safe spot atop crocodile **J**. The best position is just left of the center of the crocodile's

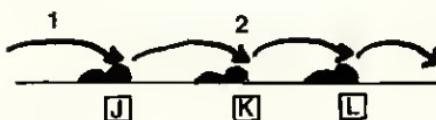


The complete right-to-left cross: We now give you our method for crossing the crocodile swamp when going to the left through the jungle. Refer to the drawing below.



head.

(2) When the mouths have just closed, leap onto crocodile **K**, then leap immediately onto crocodile **L**, and then leap immediately onto the far shore of the swamp and continue your travels.



In step 2 you must not hesitate if you expect to complete the triple jump before the mouths open again. Each of the first two jumps in step 2 are fairly small jumps; just a rightward tap of the joystick coinciding with pressing the red button will do. The final jump should be longer to be safe.

One final suggestion on this method: When you land on crocodile **L**, try to land on his safe spot; that way even if the mouths open earlier than you expect, you can still complete the final leg of your multi-jump step 2.

Stick It to Them

Consider the tar and quick-

sand pits with retraction. The outer limits are always at the exact same points on the screen, regardless of which scene you encounter them in (although the trees in the background may be spaced differently). Knowing these precise limits can save you time in the overall jungle journey. Here's a tip to help you learn those limits quickly. Place a thin vertical strip of masking tape on the television screen to precisely mark the limits. This way you can go right up to the edge and get a good jump as soon as the pit starts to retract. After you have more or less memorized the limits, remove the tape and proceed by "intuition." (Hint: If the TV is not your own, check with its owner before taping up the screen.)

A Solution

HERE IS ONE POSSIBLE "solution" for Pitfall! It occasionally uses the underground passage to bypass above-ground scenes without any treasures. If you execute this pattern without too much delay, without running into any logs, and without losing

all your lives, then you should be able to net around 100,000 points.

(1) In scene 1, go just a wee bit right and descend the stairway into the underground. Then proceed leftward; you will continue going to the left for the remainder of the game.

(2) At the second scene, hop over the scorpion and then proceed to the third scene.

(3) At the third scene, take the stairs back up to the ground level of the jungle.

(4) Go to about the fourteenth scene and pick up the first treasure (a money bag).

(5) Stay on the ground level, running left, for several more scenes until you can pick up the second treasure. Take it, and continue going left.

(6) At the second "opportunity" that follows, go back underground. (By "opportunity" we mean a stairway that leads you down to a point where you are *not* blocked in the same scene by a brick wall on the left.)

(7) Continue underground until the next stairway; take it to the ground level.

(8) Continue above ground, always going to the left. Pick up the next five treasures. (The last one, in case you lose count, will be the second silver bar you come to.)

(9) Go down at the next "opportunity."

(10) Hop over one scorpion and then go up at the next stairway.

(11) Proceed to the left on the ground level for the rest of the game. Gather all the treasures as you go along; you should be able to collect enough treasures to net a final score that is not very far from the maximum 114,000 points.

Stampede

Descriptive Information

IN STAMPEDE YOU ARE A cowboy atop your horse; you chase varieties of "dogies" and try to lasso them. In order to obtain high scores, you cannot let too many dogies slip behind you in the chase, and you must try not to stumble over any stationary objects (skulls or Black Angus cows). The screen shows a side view of you riding your horse. You ride continuously along a fenced trail, in which you can distinguish six horizontal lanes of movement. The four types of dogies and their characteristics are summarized as follows:

All dogies appear from the right of the screen; you ride left-to-right, and seem to approach and eventually overtake them. In games 1, 2, 5, and 6 of Stampede, there is a predetermined order to their appearances.

The order can be summarized this way:

Jersey(s)
Guernsey(s)
Hereford(s)
(skull)
Jersey(s)
Guernsey(s)
Hereford(s)
(Black Angus)

This order is repeated over

Breed and Color	Points	Speed
Black Angus	100	Stationary (can't be herded)
Light brown Jersey	25	Slow (strays behind you most easily)
Medium brown Guernsey	15	Medium Speed
Dark red Hereford	3	Fastest (stays in front of you best)

and over again. One or more of each type of dogie can appear. There may be, for example, a few Jerseys followed by a few Guernseys followed by a few Herefords. The skull is simply a stumbling block for you; if you run into one it delays you, wasting precious seconds. Skulls are not worth any points, and are strictly to be avoided.

The dogies appear in fairly rapid succession (no pauses between entrances) for the first few thousand points of the game.

You use your joystick to move yourself (and your horse) up and down from one lane to another. The horse and rider's horizontal motion cannot be controlled; the trail essentially comes to you and you cannot control your riding speed. The joystick's red button controls the release (throwing) of your lasso. You must be in (approximately) the same lane as your target dogie in order to rope him. While your lasso is in the air, you cannot move up or down; you are "frozen" for a brief moment in time. The lasso always travels forward a fixed distance, and you have to position yourself behind the

target dogie. On difficulty B the lasso's reach is much longer than on difficulty A, making it easier to rope dogies.

Because the horse's speed is greater than the speeds of any dogies, if you never throw the lasso, you eventually ride by the dogies and they go off the screen behind you (to the left of the screen). A dogie that you pass this way is lost to you forever and is called a "stray." You never get points for any stray dogies, but that's not the worst of it: You start the game with an allowance of three strays; if a fourth one strays, the game ends. However, for each thousand points accumulated, you are permitted one extra stray—up to a maximum of nine strays in reserve.

As you lasso and catch a dogie, he disappears from the screen. If you throw the lasso and miss a dogie, he keeps on trotting along.

There are eight different variations of the Stampede game. Picking a game number allows you to select a particular combination of these game options:

- Whether the pattern of the dogies' appearance is predetermined or random;

- Whether the dogies move perfectly horizontally in their lanes or whether they move slightly up and down, making it harder to lasso them;
- Whether the dogies start the game at slow speed or at a gallop.

Helpful Information and Guidelines

THIS SECTION CONTAINS ideas that can help you improve your skill and scores at Stampede. Some of this material is just general, while other parts give specific steps for you to follow.

Herding

If your horse bumps into any of the moving dogies (the Jerseys, Guernseys, or Herefords), the dogies are automatically bumped forward to the right edge of the screen. This herding process keeps the dogies in front of you and gives you another shot at them, rather than allowing them to stray behind you and count against you. You would generally herd under these circumstances:

- When a dogie is too close

to be lassoed, or

- In order to bump ahead a lower-point dogie so that you can lasso a higher-point one.

All cattle except the Black Angus can be herded. The Black Angus sits stationary, facing you; he will not be budged (but if you let him slip by you without being lassoed he will be deducted from your allotment of strays).

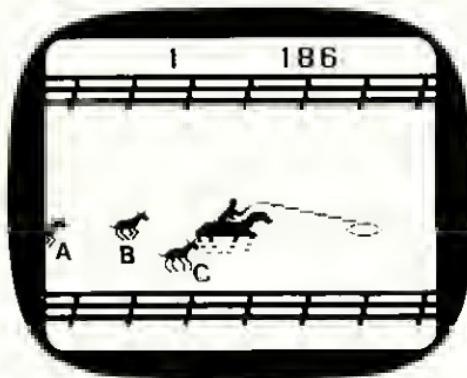
In order to herd, you do not have to bump a dogie with the front of your horse—if any part of your horse touches any part of the dogie, that dogie is herded.

With Repeated Herding They Get Stubborn

The same dogie cannot be herded indefinitely. After repeated herding, he gets a bit stubborn. Then he will not be pushed all the way to the right edge of the screen. The more stubborn he gets, the less he will be pushed ahead. After several times, he will hardly seem to be moved much at all. Try to keep a general picture of which dogies on the screen you have already herded; strive to lasso those dogies soon.

Touch One and Herd Them All

At times in the game, dogies enter in small clusters, all in the same lane. If you encounter a group of two or three of one breed in the same lane, you can take advantage of some herding efficiencies built into the Stampede game. If your horse contacts the lead (rightmost) dogie in a "same-lane" group of two or three dogies, then that entire group is herded—provided that they are still visible on the screen. In the figure below, all three dogies will be herded even though two of the three have already slipped behind your horse. Note that the leftmost dogie will be herded, even though he is only partially visible.



When the group is herded, the leftmost dogie (dogie **A** in the drawing) will be pushed to the right edge of the screen.

This means that dogies **B** and **C** will actually be bumped off the right edge of the screen temporarily. This gives you some time to tend to other things before you catch up on that bunch. Get used to herding the bunches this way; it really does give you extra time both before and after the herding activity.

Lasso with a Purpose

During lassoing, action is "frozen" vertically for a brief moment. While the lassoing is proceeding, you cannot move your horse in an up or down direction; you are temporarily "paralyzed" and cannot reposition until that momentary spell is broken. Therefore when you lasso, make the throw count; don't release the lasso unless you have a pretty good chance of success.

Push and Let Go

When you lasso, get in the habit of pushing the red button and letting go of the button immediately. Never keep the red button depressed. If you hold it down too long it may result in a second lasso throw without a purpose. This second, useless lasso throw

will then unnecessarily paralyze your vertical movement. Always lasso with one quick action of your thumb.

Lasso While Herding

It is often more efficient if you try to lasso a dogie as you are in the process of herding him. You can herd him, let him run out in front of you, and time the lasso throw so it is there to meet him.

Lasso at Many Distances

You can lasso a dogie at any of a number of distances in front of you. The lasso does not have to be fully outstretched at the time it meets the dogie. All that is necessary is for the head of the lasso to touch any part of a dogie during the flight of the lasso.

Lasso the Light Ones

A general strategy which applies to all of the Stampede game variations is to lasso the light-colored doggies and herd the dark-colored ones. (This applies only to the moving dogies, not to the stationary Black Angus cattle). The lighter cattle are the slower, high-point ones. The dark dogies are the fastest, lowest-point ones. Thus if you have

a choice, you should always lasso the lightest ones because:

- They are worth more points and,
- Being slower, they tend to slip behind you more easily.

You keep yourself in the game longer if you herd the dark and lasso the light.

After the Dark, Angus or Skull

In the Stampede games with a predetermined pattern, you know that the order of appearance is Jersey, Guernsey, Hereford, then Angus or skull. After finishing off the last of the dark red Hereford bunch on the screen, get ready for the following object. After you lasso the last Hereford of the first group of Herefords you take care of, there will be a skull very soon in *that same lane*. After you have lassoed the last Hereford of the second group you polish off, there will be a Black Angus sitting and waiting for you in *that same lane* as the second bunch which you've completed. This predetermined pattern alternates. If you have just encountered the Black Angus, you know that there will be a skull in the same lane as the Hereford group you choose to terminate. Always

keep in mind which is coming up next; know whether your next move following a group of dark red Herefords will be to lasso or avoid.

If a Hereford Strays

Whether the last dark red Hereford of a group is lassoed or strays, that group of Herefords is considered "finished." In Stampede games with predetermined patterns, when the Hereford is finished by either means, a skull or a Black Angus next appears in that same lane. So even if that last Hereford strays by you, be mentally prepared for that same predetermined skull or Black Angus. Don't dwell over the loss of the stray; get right back into the flow of the game by anticipating what comes next.

A Loss on the Cross

Try to get used to knowing the time required for you to move your horse various distances in the vertical directions. Develop a feel for the time it takes to cross the entire height of the screen. This can assist you in judging whether or not to cross the screen to try to prevent a stray when you're busy at the other edge. If

you're at the top of the screen tending to a group and you spot a dogie at the bottom about to slip past you, you've got to make the right decision instantaneously. If you choose to go after him, you may lose more than one dogie by the time you get back up to the top again. If you judge the crossing action to have little chance of success and you have already built up a decent stockpile of "strays allowed," then it would be wiser to kiss that dogie goodbye and tend to the more important operations where you are.

Roping High Scores

We next present a detailed strategy that you can learn and follow step by step. It applies primarily to games 1 and 2 on A or B difficulty. The strategy works beautifully up to around 2,500 points or so; some players will also be able to make it work up to around 3,000 points. After that, execution of the precise pattern becomes difficult, but much of the general concept can still be applied.

The general idea is to split the screen into two parts, the upper half and the lower half. You apply one procedure to

the top half, and another to the bottom half. Then you get to a point where the two halves of the screen have essentially been reversed, and just "flip-flop" your previous practices.

These are the steps to follow:

- (1) First lasso all of the two lighter shades of cattle on the entire screen, herding the dark red Herefords if necessary. After this there should be nothing but Herefords all over the screen, in all six lanes.
- (2) Of these six lanes of Herefords, lasso all in the top three lanes but keep herding the ones in the bottom three lanes.
- (3) As you lasso the Herefords in the top three lanes, avoid the skull in the lane of the first bunch you lasso, rope the Black Angus which follows in the second lane you process, and avoid the skull in the last Hereford lane you complete in that half of the screen. It should be no problem remembering which object (skull or Black Angus) is coming up next since the three bunches are handled so close together.
- (4) Keep herding the Herefords in the bottom three

lanes for a while yet. As the lighter shades of cattle appear to fill in the gaps in the top half of the screen, lasso them. Remember to lasso the lightest ones first, then the medium shades next. The medium-shade dogies (the Guernseys) can be herded more easily, allowing you some more time to lasso the lightest ones first.

(5) After this you will soon have a bunch of "new" Herefords in the top half of the screen, and an "older" and more stubborn collection on the bottom half of the screen. You must now turn your attention toward lassoing those stubborn Herefords in the bottom half of the screen, herding the new Herefords in the top half as necessary.

(6) As you are tending to those in the bottom half, remember that the Black Angus will appear in the first lane finished here (since you left off with a skull in step 3 above). Since the sequence in the bottom half will now be Angus, skull, Angus, get prepared to lasso, avoid, and then lasso.

(7) After these steps, you will have new lighter dogies entering to fill the recently made gap in the bottom half and some Herefords in the top

half who have been around for a while. You now lasso all lighter shades of dogies in the bottom half while herding the Herefords in the top half as necessary. You then end up with fresh Herefords in the bottom half and older, more stubborn Herefords in the top half.

(8) You now go back and repeat the precise actions described in steps 2 through 7 since the situation is identical! Keep applying this pattern as long as your coordination and speed permit.

As you can see, the key is lassoing all the lighter shades of dogies, repeatedly getting to the point where the screen is filled with Herefords. You then herd one half of the screen as you lasso the other half, watching for skulls and Black Anguses. This split-screen technique makes it easy to remember which are the more stubborn Herefords, and also to remember which is coming up next—skull or Angus.

Happy trails to you, pardner!

StarMaster

WE THINK STARMMASTER IS one of the most interesting cartridges currently available. It takes some getting used to, but once you have the mechanics of game play down pat, it's a rewarding combination of skill and strategy. The easiest level can be mastered by almost anyone with practice, and the succeeding ones require increasing skill and hand-eye coordination that should continue to challenge even the most gifted and experienced player. StarMaster presents a new dimension in realism for space-flight home-video games. Indeed, StarMaster may represent the beginning of a new generation of video games, one that is characterized by significant enhancements in the areas of graphics and game sophistication.

complex instruments at your disposal. It has different screen scenes with completely different layouts and purposes. One screen presents a view as though you are looking out the front window of a rapidly traveling spaceship. Objects such as stars, meteors, and enemy spaceships appear as tiny dots, approach, and go whizzing by you. It's a rather cosmic effect. Another screen, called the "Galactic Chart," shows you a less detailed overview of the entire StarMaster galaxy. At your control, you switch back and forth between these two views to analyze and plan your strategic activities and then execute them.

You have four "starbases" located in scattered sectors (there are thirty-six sectors comprising the galaxy in a six-by-six array). Your mission is to defend these starbases from destruction by enemy ships. Your final game total, the "mission evaluation," is computed as a function of:

- Enemy ships destroyed (+)

Descriptive Information

STARMMASTER PUTS YOU right in the cockpit of an intergalactic spacecraft with

- Starbases lost to the enemy (-)
- Dockings for refueling and repairs (-)
- Elapsed time (-)

As you wage battle and enemy ships detonate a number of bombs in your vicinity during flight, you suffer various types of damage. If the damage is severe enough, you have to return to a sector containing a starbase and dock with it. If you maneuver properly for docking (not an easy task), then your damage is repaired and you start fresh again. To dock, you must guide your ship so that the starbase enters your crosshair sights at just the right time during its closest approach; if you're off just a bit, you miss the starbase and must circle back and try again.

Your remaining energy is also displayed and must be constantly monitored. When the fuel reserve is getting low, you must likewise return to a starbase for docking and refueling. If you let your energy supply run down completely, the game ends.

The joystick controller is used for StarMaster. Moving it left and right, of course, moves your ship in those

respective directions. The biggest problem for beginning Starmaster players will be getting used to the other function of the joystick:

- Pushing it forward makes your ship go down
- Pulling it back makes your ship rise in space

While pulling seems like a downward stick movement to many players and they would expect this to make the ship drop, the opposite is true: The joystick works like a real airplane's controls.

To shift from the cockpit view to the Galactic Chart in order to select the sector of the galaxy you want to enter, you have to toggle the "Color/B-W" switch on the Atari console. You then hit the red button to "warp" (travel rapidly) into the sector chosen. The red button is also used for firing missiles from your laser cannons.

Figure 28 shows a typical





view out the front of your ship as you are engaged in fighting the enemy. Figure 29 shows a Galactic Chart display: Your starbases show up as the large oblong blips; the small square blips are the enemy starfighter ships; the "+" marks your ship's position.

There are four game variations with increasing numbers of enemy fighters, faster meteors, faster enemy ships, and more accurate enemy guns. Even the skilled and experienced pilot should find continual demands.

The StarMaster game was designed for use on a color TV, and shades of color at various times play a key role in game information. For example, when you are dogfighting with enemy ships, the color of the explosion tells you whether you suffered damage, the enemy is destroyed, or your missile

destroyed the enemy missile. With a black-and-white TV set you are at a definite disadvantage, but can still play the game and develop at least your fighting skills.

Helpful Hints

Here are a number of helpful thoughts to keep in mind during your StarMaster missions.

Damage Control Center

The Damage Control Status indicator shows you the current damage done to your ship; this instrument should be one of your best friends in space. The types of damage possible are:

Radar: This is a relatively mild type of damage to your spacecraft. When your radar has been hit, enemy fighters cease to show up on the Galactic Chart. You will continue to see the enemy spacecraft when you and they are together in a sector. This is not a problem that has to be repaired immediately.

Warp: Warp-engine damage is also a minor type of damage. None of your

fighting capability is taken away; all "warp damage" means is that you now use twice as much energy when you warp into a new sector. (When you call up the galactic chart, the computer panel takes warp damage into account and always shows the actual amount of energy required to warp to any given point in the galaxy.)

Laser: Laser-cannon damage is much more serious. It means that you cannot fire missiles until you have had this damage repaired by docking at one of your starbases. Even though you can probably withstand some further damage from enemy fire, you cannot destroy any foreign ships or meteors. You should try to get the damage repaired as soon as possible, but the situation is not "life and death" just yet.

Shields: Destruction of your shields is the worst type of damage. One more hit from a UFO (unfriendly flying object) and you can kiss your galaxy good-bye.

When Caught with Your Shields Down

When your shields are damaged you are totally defenseless.

You may be able to survive for a short while by being skillful enough to dodge UFO's, but you need to be darn lucky to last for long. When you undergo shield damage, we suggest immediately going to your Galactic Chart. Dock with a starbase as soon as possible and repair the damage, then go back to concentrating on your offense.

Avoidance

During warp travel (which you can recognize by the whooshing noise and by the way heavenly bodies rush by you in space) you will usually encounter from one to three meteors on your way into the new sector. They appear as small yellow dots that rapidly get bigger. You can either shoot or dodge the meteors. Shooting them of course uses up energy, and you get no points for destroying meteors. It seems more practical and also safer to simply avoid them; stay well out of their way. At the Ensign (easiest) level you should be able to avoid all of the meteors. At higher levels, where the speed is increased, it becomes very difficult to dodge all of the

meteors, and you will probably be forced to shoot some of them.

Shots at the Dots

Some players like to wait until enemy ships are large to shoot at them; they figure they have a better chance if the target is larger. We suggest, on the contrary, that you take shots at the enemies while they are still small, appearing almost as dots. You need not wait until you see the "whites of their eyes" before firing. An enemy who is very far away and appears as a tiny dot is usually not much of a threat to you. The larger (closer) you let him become, the more chance you are giving him to shoot at you. This strategy may drain a bit more energy, but it may also save your life.

Don't Be Too Trigger Happy

Often when you're engaged in a dogfight with an enemy fighter, it's hard to resist the temptation to hold the fire button down. Do keep in mind the fact that each wasted shot costs you one hundred energy units. Usually it should take you no more than five shots to destroy each enemy spacecraft. If it habitually

takes you much more than that, you should reconsider your shooting strategy.

Energy Shortage

An alarm light goes on when your energy level drops below 1,000 units. This does not mean that you have to wait until that time to think about docking with a starbase. We suggest that you keep an eye on the energy level and consider docking after the energy level drops below about 2,500 units. This would be the safest game plan, since a few well-placed shots from enemy ships could place you in real jeopardy. If you don't feel like docking right away, then you might consider one small relatively safe venture such as a tour through a sector containing only one enemy spaceship.

Operation Starbase

As you defend a starbase, tend first to the enemies in sectors closest to that starbase. The enemy moves continuously through space. Enemies in the middle of the galaxy are farthest from the starbases and pose no immediate threat to them.

Know the Enemy

Defense of the starbases is made easier by knowing where the enemies are going. You have more chance of success if you know their next destination. The same enemies will always go to the same sectors on the Galactic Chart first. In all games, the first enemy target is the starbase in the southeastern corner of the galaxy; this lower-right starbase will always be surrounded earliest in the game. (The enemy ships cluster around starbase before they destroy it.) Defend that starbase first, and destroy foreign spacecraft in its nearby sectors before any others.

The enemies next attack the northwest starbase, then the southwest one, and finally the northeast one. Defend them in this order:

2	4
3	1

If you want to observe the pattern of the enemy's movement, just start the game, call up the Galactic Chart (*don't* press the red button), and sit back and watch the chart. The enemy ships will travel fastest if you are at level "S."

Note: At level "5"—since you will probably have to lose

at least one starbase before you complete a game—you might want to try forgetting about that first base and concentrate on the defense of the upper-lefthand starbase right from the beginning of the game.

Colors Are Important

One of the first elements of StarMaster you must absorb is the meaning of the various flashes of color as you confront the enemy. A red flash means you have destroyed the enemy plane; a blue flash means you have destroyed his gunfire; a yellow flash means your ship has been hit. To help you get used to this (and be able to react accordingly), try memorizing the following lines:

- Red, he's dead
- Blue, relief for you
- Yellow, you're Jello

One additional note: We have observed that sometimes if you hit an enemy fighter immediately after (or at the same time as) he hits you, the yellow flash will not be followed by a red one to signal your destruction of him. This only seems to happen when there are more enemies left in the same sec-

tor. When your display panel turns green, you know you have completely cleared a given sector.

Apollo Game
Space Cavem

Imagic Game
Demon Attack

Spectravision Game
Planet Patrol

Space Cavern



Descriptive Information

SPACE CAVERN IS A RELATIVELY uncomplicated but rather charming video game, and one whose options include some very fast and challenging action. In it you are a spaceman who has landed on a strange planet riddled with subterranean mazes and tunnels that are inhabited by hostile flying creatures called Electrosauri and shaggy beings called Marsupods. Your mission is to dodge and destroy these creatures using your photon ray pistol. The game objective, of course, is to stay alive as long as possible and run up as high a point total as you can by destroying the strange, colorful creatures.

The screen for the Space Cavern game is above. You control the "mushroom headed" shape at the bottom of the screen. You can only move your spaceman sideways along the bottom strip, but you can shoot both sideways and straight up. The hairy beast approaching you along the bottom left is a marsupod; he can maneuver only along the bottom edge of the screen. The marsupod does not shoot at you, but will fry you upon contact. Each of the flying monsters belongs to the Electrosaurus genus of frightful, flying foes. They dance back and forth all over the screen except for the bottom strip, and erratically drop bombs toward the bottom of

the screen. Note the variety of Electrosauri; there are at least five different species. The behavior of the various Electrosaurus strains is essentially uniform; you need not be concerned with the precise type of Electrosaurus you are facing.

You utilize the joystick controller in Space Cavern. The red button fires your photon ray pistol straight upward (only one missile on the screen at a time) and it can annihilate the Electrosauri. Moving the joystick left or right moves you left or right along the bottom strip of the screen. Pulling the joystick back and pushing it forward cause a disrupter ray to be fired toward the marsupod regions to your right and the left respectively.

There are forty-eight game variations of Space Cavern. The game number is used to determine various combinations of these available options:

- Number of Players (one or two)
- Maximum number of Electrosauri present at one time (two or four)
- The direction of Electrosaurus bombs (straight

down or random)

- Whether or not there are marsupods
- The skill level (determined by the size of the Electrosauri that begin the game)

Game 9 is the easiest one-player version.

Setting the difficulty switch at position A causes the Electrosauri to use fast bombs; B is the normal difficulty setting. On B their bombs start off slow but then approximately double in speed after 40,000 points.

In the two-Electrosaurus games, the sizes of the Electrosauri change as the game goes on. Below 20,000 points they are both large; from 20,000 to 40,000 points one is large and one is small; after 40,000 both Electrosauri are small.

Helpful Hints

HERE ARE SOME GUIDELINES that should prove beneficial to players of Space Cavern.

Right: Pull

In order to exterminate marsupods closing in on your right side, the joystick must be

pulled toward you; to zap marsupods on the left side, the joystick must be pushed forward. This comes as a rather unnatural movement for many beginning players. But you just have to get used to it, and practice until it comes automatically. Remember: If the enemy's on the right, pull; if he's on the left, push. Just keep thinking "Right: Pull" to help commit the concept to memory.

While You're Getting Used to It

While you are getting used to the concept above, here are a couple of ideas to smooth the transition:

- (1) When you have a temporary break in the action, practice by pretending there's a marsupod on the right and shooting him, or that there's one on the left and shooting him. Natural breaks do occur periodically when the marsupods cease to attack and Electrosauri are staying away from your area of the screen.
- (2) When you see a marsupod approaching, you could pull and then push rapidly, one after the other. This ensures that you fire one shot in the correct direction, even though you waste one other shot in

the other direction. While it may not help you memorize the correct control actions, it will keep you alive during the learning phase.

Center Position

Our experience has shown that the best position for your spaceman is in the center of the screen. Stay in the middle unless you are forced to leave. From the midpoint in the strip, let the Electrosauri come to you. Such strategy will permit you to play the game with a minimum of movement, a helpful philosophy indeed. It will also give you time to react to a marsupod coming at you from either side.

Hit Them High

In the normal Space Cavern game, you are most vulnerable when you shoot to sizzle the Electrosauri. If their bombs drop straight down, then they are able to eliminate you at precisely the time when you can annihilate them. Because of this, you should shoot at them when they are at high points in their flight patterns. This gives you the most time to dodge their bombs should they fire at you at the exact instant when you are blasting them.

Avoid Them Low

For the same reasons as stated immediately above, you should always try to avoid Electrosauri when they are at low points in their flights. Trying to return their fire when they are so close to you gives you virtually no time to react to their bombs and take evasive action.

Forget the Ghosts

When your flying foes are wasted by your photon ray pistol missiles, they are transformed immediately into smaller "ghosts" which then descend toward the bottom of the screen. These spirits are perfectly harmless. Their contact or presence has absolutely no effect on your game performance; they cannot harm you. After destroying the Electrosauri, ignore the ghosts and attend at once to other Electrosauri or marsupods.

"A" Makes You Appreciate "B"

Some Space Caven players get frustrated when they cannot soon master the game. To better appreciate the timing and chances for survival at the B difficulty, we recommend that they try a quick game or two at the A difficulty setting.

After that, the B game seems easier and more enjoyable.

Playing some games on A difficulty is also excellent training for the later phases of the B game. As you recall, past the 40,000-point mark the enemy bombs speed up even at B difficulty.

Many, Not One

The marsupods must think that there is safety in numbers. Once a single marsupod has appeared, always be ready for more of them. Friends of the lead marsupod are usually not far behind.

Three from a Side

Very rarely do more than three marsupods in a row appear from one side of the screen. So if you have just extinguished three from the same side, be ready for the next one to emerge from the opposite side.

Sidewinders

Your airborne enemies in Space Cavern almost always drop their deadly bombs from one of their edges. They hardly ever send out bombs from their center—maybe 10 percent of the time. Thus be very careful when you are just off

to the side of one. If the edge of your body is just under the edge of an Electrosaurus, you could be in for a big surprise.

Move More on "A"

The bombs drop much more rapidly on A difficulty. Because of this they are harder to dodge, and you have to move around more in order to avoid being under a mid-level or lower Electrosaurus. On A games you have to deviate somewhat from the B philosophy of minimum movement; you have to move back and forth more!

Don't Get Refried

After you get fried by enemy fire, your skeleton glows for a while and your body fragments disintegrate. If you have any lives remaining, your new body appears after a momentary delay. You always reappear on the *right* side of the screen—and the marsupods seem to know this; there's usually one lurking on the sideline, ready to capitalize on your vulnerability. Therefore always go immediately to the screen's center following your being hit. One good way to implement this strategy is to hold the joystick to the left as

soon as you have been hit. Thus when your new body appears it will hustle into the middle with no delay.

Rapid Fire Is Not Advised

You can only have one missile on the screen at a time. If you fire one and it misses a target, you have to wait for it to completely leave the screen before you can fire another. Thus a bad shot wastes precious time before you can make another. For this reason we do not promote holding the red button down. Make every shot count, in an individual fashion; don't use rapid fire. One related note: Each enemy is also limited to a maximum of one shot on the screen at a time.

Even Marsupods Speed Up

As the game progresses, the Marsupods display a general trend: Their speed gradually increases. Thus if you stray too close to the sides of the screen late in the game, the Marsupods can have a field day turning you into dead meat before you can react. It is especially important to stay in the center of the screen as the game goes on. You might get away with straying to the sides in the early going, but

don't tempt fate later.

Extra Lives

You start the game wth three extra lives. With every 20,000 points accumulated, you get an extra life. However, although the instruction booklet does not point this out, this is subject to a maximum of three lives stored up at any one time. Thus if you go up to 20,000 without being hit, you are *not* given an extra man; such good play early in the game is not rewarded. So if you are very near 20,000 points and still have all three lives remaining, you might as well get fancy and experiment a bit, since if one life is wasted you are right on the brink of getting another.

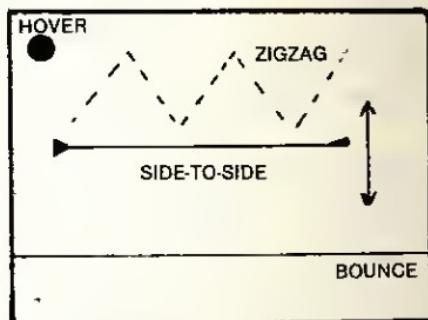
Two Birds with One Stone

Here is an interesting phenomenon we have observed: If two flying Electrosauri happen to be lined up just right with one above the other, it is possible for a single missile of yours to eliminate both of them. This doesn't happen often enough for you to be trying and expecting it to occur. However, if you do shoot when the two are nearly over each other, your chances of

doing the double kill are increased. Note that this is a more dangerous maneuver than hunting one Electrosaurus at a time.

Pattern Recognition

Each Electrosaurus will vary its flight pattern from time to time just to keep you guessing. One may enter any of the flight patterns shown below: the zigzag, the side-to-side, the hover, or the up-and-down bounce.



One characteristic of the Electrosauri is that once they enter a particular pattern, they tend to stay with it for at least a short while (though the bounce usually doesn't last very long). They don't ordinarily enter a pattern and depart from it right away. Learn to recognize these patterns and plan your movement based on short-term predictions of enemy patterns.

Missiles Cancel Each Other Out

Here's another interesting, but not commonly applicable, occurrence. If your missile and an enemy missile are headed precisely for collision, the two missiles cancel out each other; both are annihilated and do no further damage. Even intermediate players cannot make this happen often; it mostly occurs by coincidence. But you might want to try it if you're hot-dogging, or the expert may want to try this when really cornered or in a pinch.

Let Them Hover

An Electrosaurus may go into a hovering pattern where he stays above a certain point for quite a few seconds. When this happens, leave him alone. He cannot hurt you—provided you don't insanely rest beneath him in a suicidal

attempt. Your best policy is to ignore the hovering Electrosaurus and tend to the other one or to the marsupods. If you try to fry the hovering Electrosaurus, you just make yourself vulnerable to his fire—and if you succeed, he will only be replaced with one that moves; then you will be in a more dangerous situation. If you are in a two-Electrosaurus game and both of them start to hover, just relax and enjoy the break in the action.

You Can't Go All the Way

You cannot move yourself all the way across the screen's bottom to the edges; you are restricted to approximately the middle 85 percent of the horizontal strip. Keep this in mind in situations where you might be tempted to duck to an edge in order to evade a falling missile.

Demon Attack



Descriptive Information

IN DEMON ATTACK, IMAGIC has pitted you against some strange and colorful demons from outer space. Demon Attack has the most interesting audio menagerie we have encountered. Just listening to the blend of sounds of this game can be entertainment by itself.

The screen for this video game is shown above. Your laser cannon is shown at the bottom of the screen, and is constrained so that it can only move sideways. You can fire straight up at any of the wild, bizarre flying creatures. Your primary goals are to avoid the falling fire of the enemy and to simultaneously massacre your fierce winged

opponents. They are able to fire entire clusters of missiles at you during some parts of the game. You, on the other hand, are limited to one missile on the screen at a time, but the amount of ammunition is unlimited. (Your missiles and the enemy's cannot cancel each other out as they do in some of the similar home video games.)

You begin the game with three extra lives in reserve. Whenever you survive a wave of enemy attacks without being hit you earn an extra life, up to a maximum of six extra lives in storage. The first waves are rather simple, but waves become increasingly difficult and complicated as the game goes on.

Each wave consists of eight large demons. Three of them come out to greet you initially, and are replaced as you destroy them. During the first few waves of the game, the unfriendly flyers hover above you and one drops bombs at you; the bombs are more or less scattered about the screen. (Note: There will never be more than one demon at a time dropping bombs.) During the later waves, the enemy is more sophisticated; the demons shoot at you in a more intelligent fashion, and they also swoop down at you. Waves 5 and onward (and all waves in advanced games) are the "splitter waves." During them, any large enemy you hit turns into two smaller, harder-to-hit foes. These smaller enemies can really be the source of much distress and grief to you.

All during the game, the demons are fairly hard to follow since they flutter about in apparently random fashion. It is difficult to track them and accurately predict where even their next step will take them. This can be a bit nerve-racking. During the splitter waves, only the smaller enemies can dive toward you.

The larger ones will only flutter above you and possibly drop bombs; they never contact you.

You use the joystick controller for Demon Attack. The red button fires your missiles, and pushing the joystick to the left or right controls the movement of your cannon along the bottom of the screen.

The Demon Attack cartridge includes the following variations:

- One player or two-player games;
- Straight or guided missiles (tracer shots);
- Normal Demon Attack or Advanced Demon Attack, in which the earlier waves are skipped;
- Regular two-player games or special "co-op" versions.

In the co-op game variations, the two players time-share the same game cannon. Control of the laser cannon shifts from one player to the other every four seconds; thus they team up against the attack of the demons. This is a slick modification of the more customary two-person game, and it can really be fun.

The difficulty switch also affects game play. Difficulty B is the basic game. Under

difficulty A, the demons attack more aggressively, move faster, and are more evasive.

Helpful Hints

Here are some guidelines to assist you in warding off the attack of the demons.

Avoid the Corners

In Demon Attack, as in many other video games, you should avoid the corners. When you're near the sides of the screen, it is easier for you to get trapped both by enemy bombs and by demon divers. The best and most flexible position is one near the center of the board. Of course you should move from that central position, but try not to get too near the corners, and if you do go to a corner don't stay there for more than a fraction of a second.

Shoot Back at the Pack

This is a guideline that can be applied to shooting anytime there are more than one or two enemies on the screen. The random movements of the demons make hitting them a real challenge, but here's an idea to tip the odds of contacting them more in your favor:

Whenever there are some demons by themselves and others in small clusters of two or more, always attack the ones that are clustered together. Shooting at a group gives you much better odds.

Overlook the Distant Shooter

Often, especially in the earlier waves, you will be in a situation where the demon bomber will be over toward one edge of the screen. When this is the case, we advise that beginners ignore him and go over to the other side of the screen and nail flying foes over there. All other things being equal, your odds for survival will be better if you avoid the shooter when you can. Remember: At any given moment, there is only one demon on the screen who is the designated bomber; the others simply flutter around.

The Point of Reincarnation

Provided that you have at least one life remaining, after you have been pulverized by the demons you are reincarnated and placed at the center of the screen. When the game action resumes following your reappearance, a demon bomber will shoot right away.

It is recommended that you begin afresh by moving as soon as you can. This will protect you in the case that the demon bomber begins that new phase right above you, in which case the bombs will begin falling at you almost immediately.

Lure That Bomber Away

A bomber will generally follow you around the screen, although in the early waves the demon bomber is not too swift in applying this strategy. If your main goal is survival for as long as possible, here is one scheme which could be used: Lure the bomber over toward one edge of the screen; be careful not to get cornered. Then, taking care to dodge any missiles, streak across to the far side of the screen and shatter as many demons there as you can before the bomber tracks you down. Repeat this process as often as you like.

Keep It Down

Especially during the later waves, when demons attack fast and furiously, it is often wise to keep the fire button pressed down, firing as often as the electronics will permit. As you hold the button down,

you can concentrate more on dodging bombs and not getting wiped out.

Rest Period

In each of the easier Demon Attack waves, the ones where demons don't split, there will be a maximum of six demons who shoot at you. If near the end of such a wave you destroy the last shooting demon but not the last non-shooter or two, the latter will keep fluttering above you indefinitely. You need not fear them; they cannot contact you or send bombs down at you, but will simply flutter above, posing no threat at all.

Tame Those Tracers

"Tracers" is the term Imagic uses to refer to Demon Attack's guided missiles. As you may know from exposure to other video games, while a guided missile is in flight, it will curve whichever way you move your joystick during its flight. Thus you can shoot the missile straight up toward the right of your target, for example, and then curve it leftward into your target. If you are unfamiliar with the use of guided missiles, you may want to practice them on the

slower-paced Combat tank game by Atari. (If you practice without an opponent, you can concentrate exclusively on getting those missiles to go where you want them to.)

In Demon Attack, many players tend to overexaggerate the tracers' curving movements. If this seems to be happening to you, you should practice very small and gradual movements to tame those tracers down to a manageable level. It is also helpful to practice making those tracer movements very smooth, not choppy.

One other note regarding use of tracers: Since the shooting demons drop their bombs straight down, you rarely get a good shot from right below them. But trying to curve your missiles into them can often lead you right into their falling bombs! To counteract this unhealthy tendency, try this: Begin your assault upon the shooting demon from off on the side, say the right side. Move toward him and release a missile just before you get under him. After the release, continue moving across the screen toward the left. Go right by him; do not delay

near him. Run clean across to the far side of the screen if you want. Your natural movement toward the left helps you in two ways:

- Its action curves the missile right into the demon.
- It keeps you moving, making you harder for the demon to hit.

Of course, you do have to be a bit careful; time your streaking so that you are between bombs as you cross beneath the shooting demon.

Dealing with Divers

In waves with splitting demons, some of the little ones will dive toward you, threatening contact that would cost you a life. Such a diver will generally follow you; it may not track your exact moves, but it will tend to proceed toward you.

If your prime concern is survival, here's what we suggest: As a demon begins its diving motion, lure it over toward one side of the screen. When it's a bit above your head still, streak over to the far side of the screen. Since the diver always continues its movement downward (i.e., it never goes back up), the diver will continue downward near

its corner of the screen. By the time it could possibly hope to get over to your side of the screen, it will be harmlessly below ground level and thus cease to be a menace to you.

If, however, you are out to maximize your point total, you must be aggressive and shoot to kill those dirty divers. (A demon is worth twice as many points once he begins a dive.) Get in position and let that demon glide right into your missile!

Splitter Waves

In all except the first four waves of games 1 through 4, each large demon will split into two little creatures when hit. These little nasties then remain until you destroy them, or they are able to dive off the screen. Here are some helpful notes for dealing with the splitter waves:

- Even after a split, remember that only one of the little devils will be a shooter.

- When you shoot at a large demon always take two shots together, with the second shot a bit off to the side of the first shot. This way you could get lucky and nail both the large demon and

one of its descendants in one tactical motion.

- Note that the smaller demons never fire as they dive. One that was shooting will change into a diver if you shoot his twin brother, but he ceases firing for that diving phase. This gives you a small break, since you have only one distinct type of threat to deal with at one time!

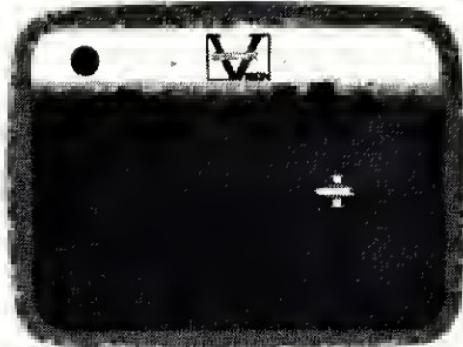
Co-operation

Games 9 and 10 let you play the unique "co-op" variation of Demon Attack. Recall that in this game modification, control of the laser cannon (both its movement and its shooting) switches back and forth between the players every four seconds. It is indeed a hectic but entertaining contest.

Since it is very difficult to predict precisely when the switchovers are to occur, we recommend the following: As the game proceeds, always pretend that you are in full control and move accordingly. If you move and shoot as if you are the only player of the game, then you never need be concerned with determining who is in control when.

Just act as though in control
and never let up; your next
rest in this game may be your
last!

Planet Patrol



Descriptive Information

IN PLANET PATROL, YOU ARE the pilot of a spaceship that appears to glide across the screen at constant speed from right to left. A constant barrage of missiles and heat-seeking torpedoes travels left-to-right toward you. You must move up and down out of their way or pulverize the foreign missiles with your own missiles. The screen for Planet Patrol is shown above. Your ship is shown at the right of the screen; the small daggerlike objects are the torpedoes and the larger ones are the enemy missiles. The enemy objects travel across the screen in seven (unmarked) lanes. In each lane there can

be only one enemy object at a time.

The game objective is to accumulate as many points as you can and, of course, avoid being hit by the unfriendly flying objects. The larger drone missiles are the slower of the two kinds of flying foe. You can destroy the missiles and get points for each, or you can simply dodge them—which nets you no points, but still keeps you alive at the game. The missiles travel progressively faster with each wave of the game. The torpedoes are the smaller of the airborne enemies, and they always travel about twice as fast as the drone missiles. Hitting them with your missiles has no effect on them; they

cannot be destroyed. All you can do about them is move out of their way.

Occasionally a friendly roundish black figure glides left-to-right across the screen accompanied by high-pitched beeps. This is one of your brave pilots who has been stranded. You must rescue him by simply touching the nose of your spacecraft to his, an easy maneuver to execute.

At the conclusion of each wave of missiles and torpedoes, following the appearance of your stranded pilot, you encounter three enemy bases behind a vertical force field. You must destroy all three of the bases before you can cross the force field. If you leave any enemy base standing as the field contacts you, this wall of death ends the game for you. But when all three bases have been annihilated, the force field shatters.

When the bases and their associated force field are destroyed, randomly scattered debris appears and the game pauses momentarily. During this brief pause you get to study the pattern of airborne debris and plan your evasive moves to follow. Each of

these pieces of debris is deadly; contact with any causes you to lose a ship. Some of the random patterns of debris are easy to glide through, but many are difficult and cluttered and can really give you grief.

Any time that you lose a ship by contact with drone missiles, torpedoes, or debris, the wave starts over (provided that you have a ship remaining).

Most of the waves are fought in broad daylight. But occasionally you cross to the other side of the planet and must fight under "night conditions." During such a wave, the intensity of the screen lighting varies from bright to very dark and back to light again. Sometimes the moonlight is not sufficient to illuminate your foes, making weaving through them pretty tricky. When the lighting becomes insufficient, your firing missiles adds light temporarily to the fight scene.

You also have to monitor your energy level, which is displayed on the bottom of the screen. You are given numerous chances to lower onto a landing strip during the game. If you enter the strip

squarely, a fuel truck greets your ship and replenishes your energy supply.

You begin the game with four patrol vessels, three of which are held in reserve. As you pass each 10,000-point mark you are given an extra ship, up to a maximum of four in reserve.

The game ends when one of the following occurs:

- All your patrol vessels have been destroyed;
- You fail to nail the enemy bases and are therefore destroyed by the force field;
- You run out of fuel and are therefore destroyed by the force field;
- Your score reaches 999,999 points.

Game options include:

- One or two players;
- Slower (children's) pace or faster pace;
- A spaceship of standard size (B difficulty) or of the wider, easier-to-hit size (A difficulty).

Helpful Hints and Information

The Pattern of the Waves

There are basically only five

different waves of Planet Patrol action. In the children's games (games 3 and 4), there are only three different waves which keep repeating—that is, what you see are waves 1, 2, 3, 1, 2, 3, and so on. In the more difficult games (games 1 and 2), five different waves keep repeating. Advance knowledge of enemy behavior in a particular wave can be useful at perhaps several points in a game.

Shots Through Wings

Once in a while one of your shots will appear to be on target to destroy a drone missile, but will somehow go right through the enemy projectile; the drone missile will continue to approach you as if nothing happened. If you are caught with your guard down at such a time, you can easily lose one of your ships. What actually happens in a case like this is that the missile passes "between" the wing and the body of the enemy drone missile.

A word of warning about this should be sufficient to prevent you from getting caught napping in such a situation. Never assume that the enemy will positively be

destroyed because your missile is approximately on target. Be prepared for the slight chance of your missile's slipping right through the enemy wing area without doing any damage. Always be ready to quickly duck out of the way if you have to.

Rack Up the Points Early

One basic strategy for the Planet Patrol game is this: For the first few waves, go anywhere you want to over the entire screen and vaporize as many enemy drone missiles as possible. Accumulate as many points as you can on those early waves. During later waves, when the game action is faster and more furious, we think it makes better sense to restrict your concentration to either the upper half or the lower half of the screen. Rather than trying to get points for nailing drone missiles, it's probably better to just try to survive and wipe out some of the enemy. Focus just on one half of the screen and do your best there; let drone missiles on the far edge of the screen stray by you.

Rescuing the Pilot

When you first hear the

distress-signal beeps of your stranded pilot, prepare yourself to meet him head-on. If you pounce on him from above or below, he will explode—and you lose a life as well as forfeit the bonus points.

Inside the Strip

When it is time for a potential refueling maneuver, a landing strip appears in a randomly chosen location on the screen. If you elect to refuel, you position your ship so that it goes within the landing strip. Note that the entire body of your ship must be within the landing strip in order for the fuel truck to make its stop. If the ship's body is partly out of the strip, the ship's, you will not have your energy supply replenished at that stop. Note also that you cannot move up or down during the time when you are above or below the landing strip, should you miss landing there.

Don't Fire if You See No Enemies

As noted above, rescuing your stranded pilot can net you hundreds of points; and over a period of several waves this

can really add up. Therefore you should always do what you can to execute this rescue mission. If you shoot your pilot by mistake, he is destroyed and you miss your chance for the rescue points on that wave. This can happen fairly often if you just fire recklessly.

To make certain that you don't bomb your pilot by mistake, we suggest that you only fire at enemy drone missiles when you see them. If you fire because you anticipate that a drone is about to enter the screen, you may find out when it is too late that you are shooting at your own pilot. Don't fire until you actually see an enemy missile.

Night Flight

The night-patrol duty appears on wave 2 and only on wave 2. During the dark periods of the nighttime wave, we recommend that you keep your fire button down continuously. This technique of constant fire will use up more fuel, but it will keep you in the game much longer.

Rubbish

As indicated above, chunks of debris appear on the screen

immediately following your destruction of a cluster of enemy bases. There is then a temporary freeze in the game action which permits you to study the pattern of rubbish pieces and plan your way through them. During this break period, you are free to move your ship up and down, and your ship is completely immune. Don't be afraid to move a few times if you change your mind as to your starting point through the maze of debris. Study the maze until you can actually see your path through the pieces; keep that image of your path mentally drawn on the TV screen.

Only debris which you initially see on the screen (partly or entirely) can hurt you. After you encounter and pass through these "real" pieces, another set of debris (which was not even partly on the screen during the freeze period) seems to be starting toward you. Don't be concerned about this second set of "fake" debris and don't let it intimidate you; it can do you no harm. If you hit any of the debris and lose a ship, you also lose your opportunity to refuel, even though the new

ship continues at the same partially depleted energy level.

You Can Dictate the Base Positions!

The enemy base cluster will appear shortly after your chance to rescue your stranded pilot. In general there will be three bases which occupy any three of four possible positions in a vertical column. Precisely which three positions they assume may appear to be selected randomly.

However, we have found that you can always force them to appear together in the three lowest positions on the totem pole if you do the following: After the rescue, bring your ship immediately down to the lowest position of the screen and await the appearance of the enemy bases. As you wait, hold the fire button down. This action will ensure that the bases are in the lowest three positions (making them easier to handle since you don't have to move so much to get them all). Also, holding the fire button down in anticipation makes sure that you get a shot off as soon as possible; and that shot is guaranteed to be right on target, destroying the lowest

of the three enemy bases.

Face the Base

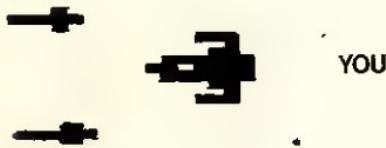
When shooting at the three enemy bases clustered next to the force field, it is extremely important not to waste any shots. Position yourself carefully and make every shot count. You don't have much time for error in this brief but vital encounter.

You essentially position yourself just right, shoot, and move on to the next base. However, be cautioned that once in a while one of your shots which appears to be going right into an enemy base will actually pass through it harmlessly. Therefore we advise you to shoot at the base, but hesitate very briefly to make sure that the base is shattered before moving into position for the next base. This short hesitation is very important, and can actually save you much time in the long run, should you have to try to loop back around and tend to the same base again later.

Watch Out for Trailing Torpedoes

Many times a drone missile will be followed by two of the faster, smaller torpedoes. The

torpedoes may be in the lanes just above and just below the drone missile, as shown here:



YOU

If you go into the drone missile's lane and shoot, all is okay if you do indeed destroy it. However, if you happen to

miss, then before you have much of a chance to recover, all three will be upon you in adjacent lanes, effectively trapping you.

To prevent being trapped in the event that you miss a drone missile, it is prudent to give yourself just a bit of extra time going in for the shot. This gives you more time to get out of the way in case you miss.

Home Videogame Players' Log

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